VOLUME LII

NUMBER FIVE

THE NATIONAL GEOGRAPHIC MAGAZINE

NOVEMBER, 1927

CONTENTS

Special Supplement, "Vasco da Gama"

SIXTEEN PAGES OF ILLUSTRATIONS IN FULL COLOR

The Pathfinder of the East
With 44 Illustrations — J. R. HILDEBRAND

Rainbow Portraits of Portugal
17 Autochromes — GERVAIS COURTELLEMONT

An Altitudinal Journey Through Portugal
With 45 Illustrations — HARRIET CHALMERS ADAMS

Round About Liechtenstein
With 19 Illustrations — MAYNARD OWEN WILLIAMS

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ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

TO carry out the purposes for which it was founded thirty-nine years ago, the National Geographic Society publishes this Magazine. All receipts are invested in the Magazine itself or expended directly to promote geographic knowledge.

ARTICLES and photographs are desired. For material which the Magazine can use, generous remuneration is made. Contributions should be accompanied by an addressed return envelope and postage.

IMMEDIATELY after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resulting given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

AT an expense of over $50,000 The Society sent a notable series of expeditions into Peru to investigate the traces of the Inca race. Their discoveries form a large share of our knowledge of a civilization waning when Pizarro first set foot in Peru.

THE Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole.

NOT long ago The Society granted $25,000, and in addition $75,000 was given by individual members to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people.

THE Society is conducting extensive explorations and excavations in northwestern New Mexico, which was one of the most densely populated areas in North America before Columbus came, a region where prehistoric peoples lived in vast communal dwellings and whose customs, ceremonies, and name have been engulfed in an oblivion.

TO further the important study of solar radiation in relation to long-range weather forecastings, The Society has appropriated $60,000 to enable the Smithsonian Institution to establish a station for four years on Mt. Brukkaros, in Southwest Africa.

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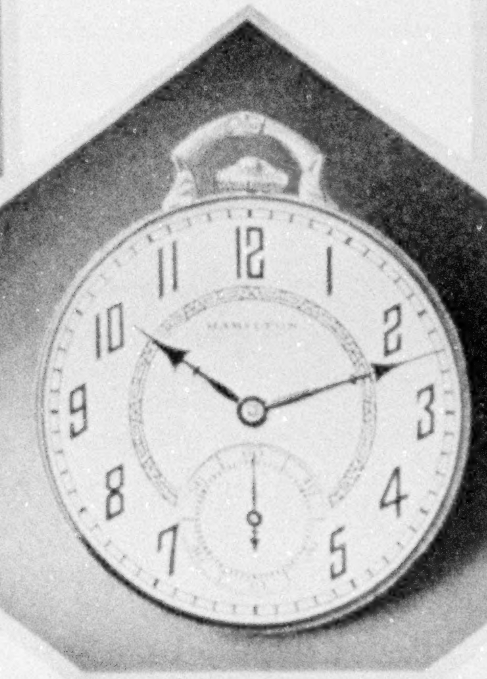
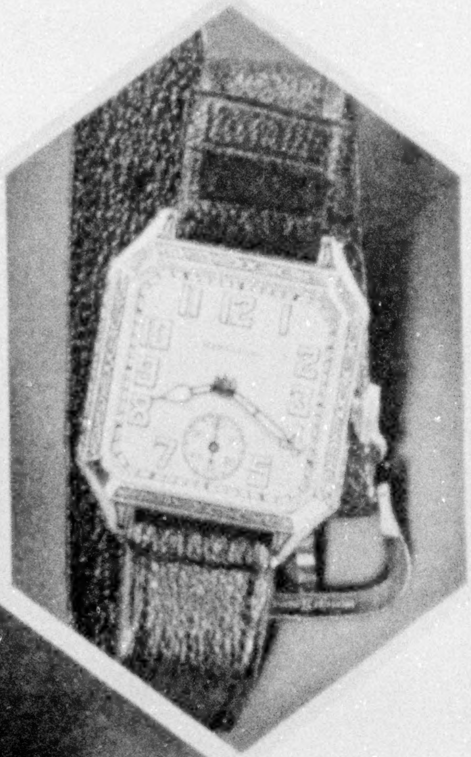
That Christmas Watch

—it must be *Beautiful*
it must be *Dependable*
it must be *Accurate*

Hamilton Strap model, in the Tonneau shape, available in 14k, or 14k filled green or white gold, plain or engraved, $55 to $87.

The Cleveland model. A smart new design with rigid bow, fashioned of 14k filled green or white gold, exquisitely chased. 17-jewel movement. $50.





Hamilton Strap model, square-cut-corner shape, available in 14k, or 14k filled green or white gold. $55 to $87. Other models at $50.

There is a thrill in the gift of a new watch—for any man—of any age. This is particularly true if the watch is a Hamilton ... Modern time is measured from the first Christmas; how appropriate, then, is the gift of a fine timepiece—a watch of studied artistry—with accuracy that is nothing short of amazing ... You may choose from a variety of Hamilton models priced from $48 in filled gold cases upward to $685 in platinum cases. Your jeweler is now ready to show you Hamiltons for Christmas. See him soon. Hamiltons are also completely illustrated and described in "The Timekeeper,"—we invite you to write for a copy of this booklet. Hamilton Watch Company, 882 Columbia Avenue, Lancaster, Pa.

Hamilton Watch The Watch of Railroad Accuracy

Life Pictures

Paint your Walls of Memory so they'll never fade . . . Stamp upon your mind the wondrous lore of a journey through many lands of strange peoples and odd customs . . . Nothing to disturb the mind . . . Only constant Peace and Comfort from Occident to Orient and beyond.

Experience it all on the

World Cruise Supreme

Aboard the famous Cunard Cruiser FRANCONIA
Sailing from New York Jan. 7 · Returning May 31, 1928

A superb steamer . . . like a refined, luxurious club, on a cruise of 34,000 miles covering the Northern and Southern Hemispheres; 10,000 miles ashore. The ship your Winter Home; an enchanting Life-Picture of the Mediterranean, Egypt, India, Ceylon, Siam, China, Korea, Japan, Philippines, Dutch East Indies, Mauritius, South Africa, South America, Martinique, the Caribbean Sea. Ask for the illustrated Guide Book and Map.

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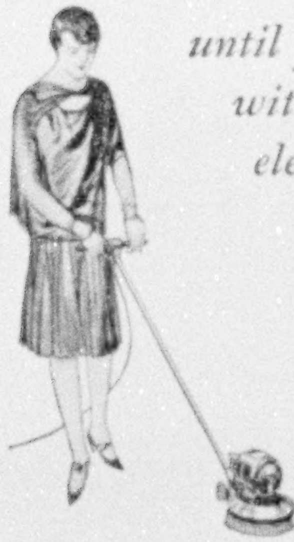
You'd never believe your FLOORS *could be so* beautiful



until you do them over with this amazing electric machine

Think of giving your floors a smooth, satiny finish like that of a piece of fine furniture!

IMAGINE having the grain of the wood show up as clearly as though the sandpaper had just left it!

Consider the satisfaction of having friends ask you whether you've had a *new* floor laid down!

And on top of all this the pleasure that you yourself get from seeing these beautiful floors every day, not to speak of the added attractiveness they give the furnishings of your home. Then, too, there is the ease of caring for them . . . they're far less trouble to take care of than your present floors.

Thousands of others are getting these results, and there is no reason why you can't also.

They are doing over their floors *themselves*—by electricity. They are using the amazing Ponsell Electric Floor Machine to scrape . . . to sandpaper . . . to wax . . . and to polish their floors.

They are saving the money . . . and the tremendous bother of having workmen come into their homes and upset their households for days at a time.

This work . . . so hard to do by hand methods . . . is easy when you let electricity help you. *You* supply the intelligence, and the *machine* most of the energy. You plug into a socket just as you would with a vacuum cleaner. In a few minutes you are running the Ponsell like an expert, and your floors are on the way to a vast improvement.

When floors are done over by ordinary methods they have to be refinished every few years; and it is no easy task, as you know, to keep them looking presentable from day to day.

But when you do them over the *Electric* way, you never have to refinish them again; and, what's more, the machine takes care of them for you forever after.

A few minutes' polishing each week, an occasional rewaxing (operations which the Ponsell Electric makes absurdly easy), and your floors become the constant envy and admiration of your friends.

The machine brings you other important benefits . . . more than there is room to describe here. So . . . while the subject is fresh in your mind . . . send in the coupon for a *complete* description.

Ponsell Floor Machine Co. NG-11-27
220-230 West 19th St., Dept. 1211, New York City

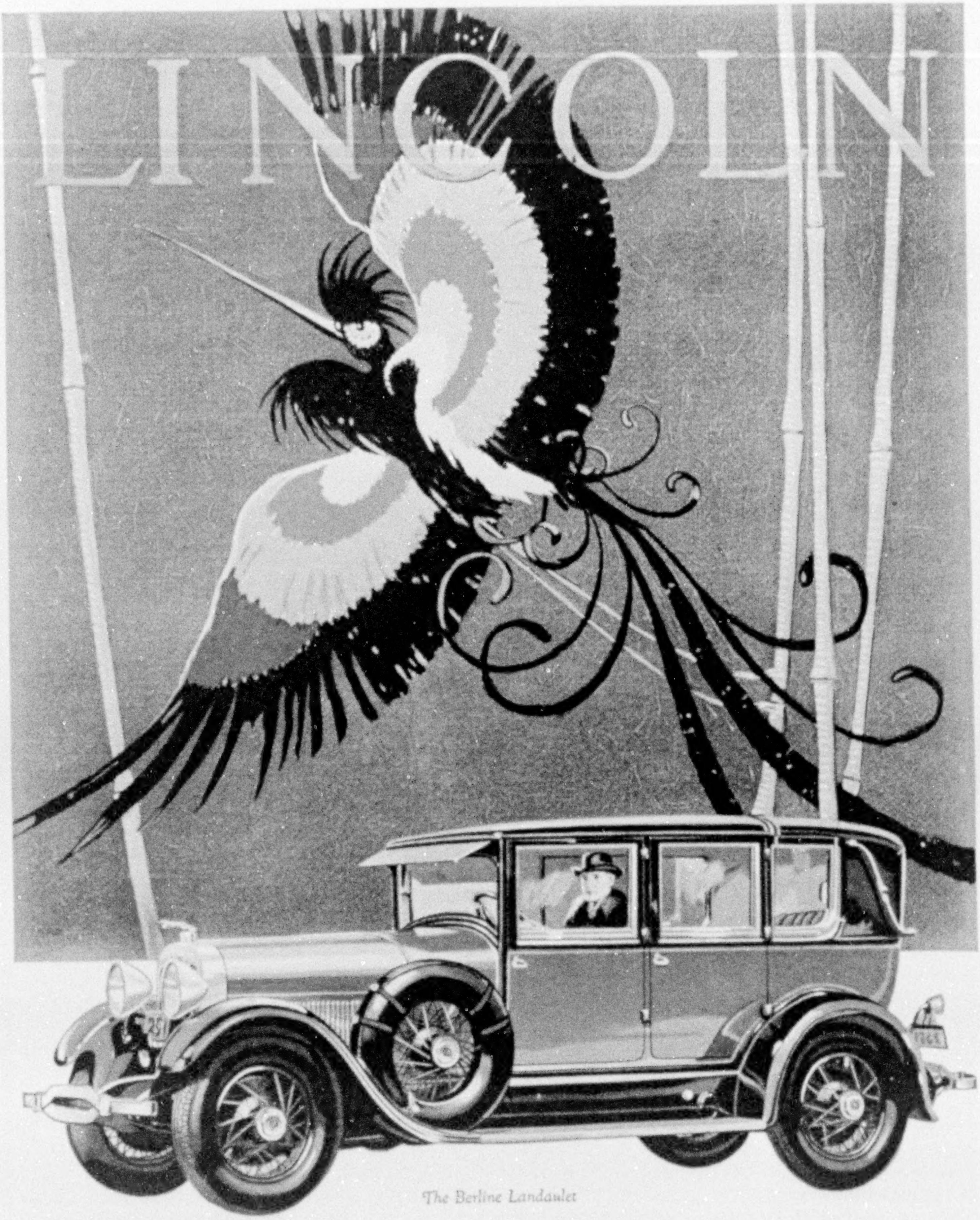
Please mail me complete information and prices regarding your Electric Floor Machine. This does not obligate me in any way whatever.

Name ....

Address ....

City .... State ....

The Ponsell takes care of *all kinds* of floors. Branches in 25 cities.

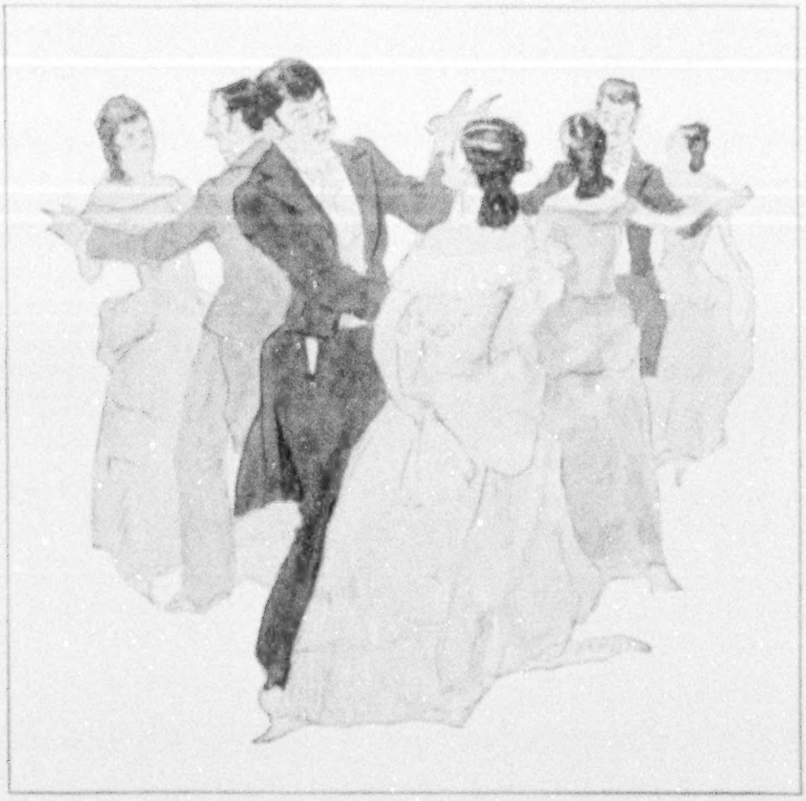


The Berline Landaulet

The goal of Lincoln builders is to build a motor car which shall reach today's peak of performance. Their next purpose is to beautify the car to the point where nothing is left undone to suit the most fastidious. ℭ How well they succeed is demonstrated by the action and beauty of this Berline Landaulet by Willoughby.

LINCOLN MOTOR COMPANY

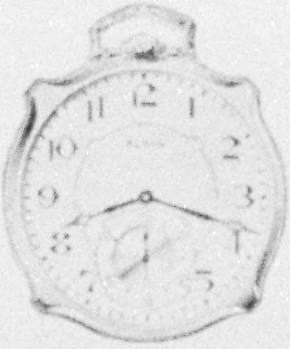
Division of Ford Motor Company



WATCHES TRUE ALIKE TO THE TIME-MINUTE AND THE STYLE-MINUTE

Here are reproduced five outstanding Elgin models. Others may be had in generous variety, and at a price range most liberal.

Smartly rectangular is this woman's wrist watch—a 15-jewel movement in a 14-karat solid white gold case, chastely engraved and enameled. The price, too, is tempting $60



Accuracy is wedded to beauty in this fine pocket watch. The case is 14-karat gold-filled. The movement has seventeen jewels. And the price is only $50

Worthy alike of your trust and pride is this thin pocket watch, a 17-jewel movement housed in a white gold-filled case. It is most reasonably priced at $40

White gold, 18-karat fine, encases this woman's wrist watch, a 17-jewel movement—with raised figures on the dial. An Elgin as loyal as it is beautiful .. $85

Here is a new Elgin strap watch with a luminous dial for easy reading. A 7-jewel movement in a gold-filled engraved case of white or green tone. It is priced at . $40

(Prices slightly higher in Canada)

DID YOUR WATCH TICK TO YOUR HEART-BEATS WHEN YOU WALTZED TO "AFTER THE BALL"?

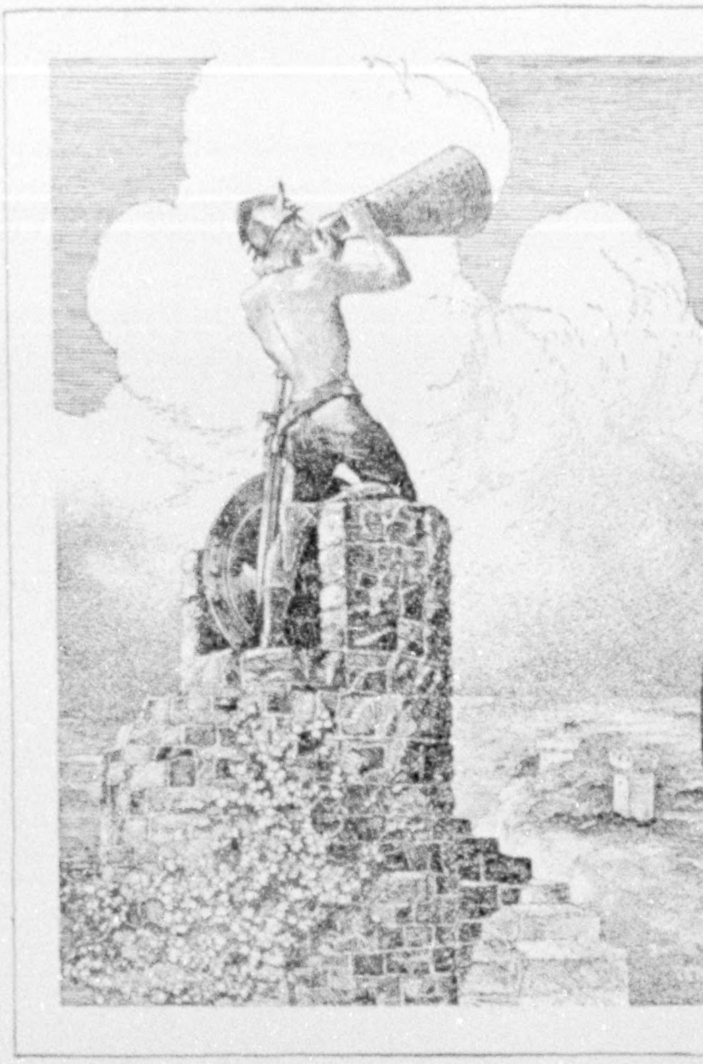
A watch may never lose a second yet be many years slow

Lost years and fleeting memories often are recalled by an old and faithful watch. Ticking away in your pocket, it becomes a garrulous yet kindly chatterbox to which you like to listen when the mood for reminiscence creeps upon you . . . But your sentimental reasons for using and cherishing such a watch are seldom, if ever, known to others. They see it and wonder why you yet carry it, a timepiece as much out of date as the forgotten songs of long ago. There is, at your jeweler's, a watch that will reflect truthfully your present business and social status . . . an Elgin Watch, loyal, thin, truly beautiful. It will tell the time for you unerringly, serve you unfailingly, engender your daily trust and your secret pride alike. And what more eloquent and convincing proof could you ask of its capacity to serve than this: Among railroad men, the country over, Elgin holds high preference.

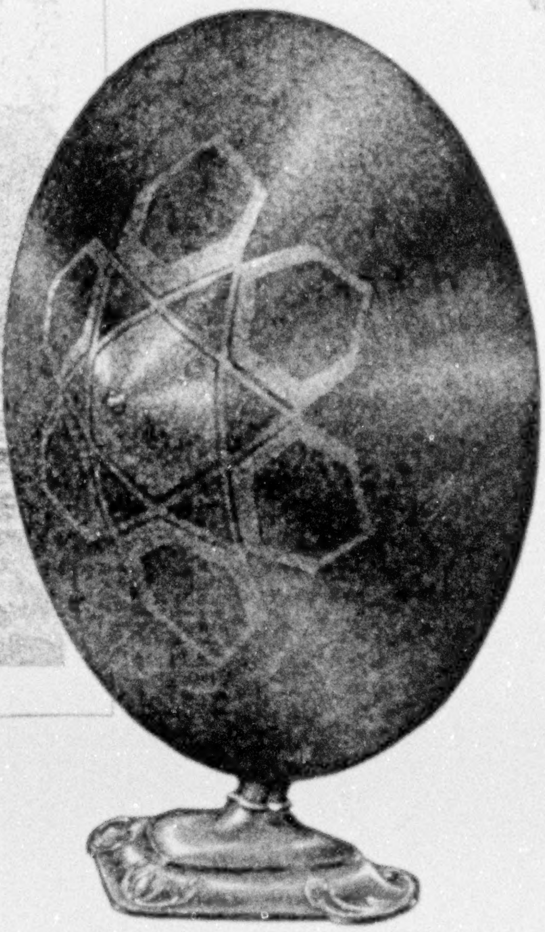
THE WATCH WORD FOR ELEGANCE AND EFFICIENCY

ELGIN

© Elgin, 1927



When the Gauls transmitted important news, it was shouted from tower to tower through a megaphone. Within fifteen hours the news of the Roman massacre at Orleans was thus sent to Auvergne 120 miles away.



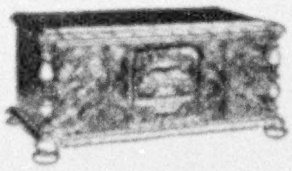
Natural Tone—Perfection in radio reception is naturalness of tone. It must reach you as it left the studio—clear and life-like. It must be rich, deep, resonant—admitting no trace of "radio accent".

Nothing is so fatal to tone quality as an "unsympathetic" loud speaker. Reception suffers unless set and speaker work in perfect harmony.

Grebe has built a *Natural Speaker*. With it your set will reproduce tone more clearly and faithfully, affording you purer tone quality.

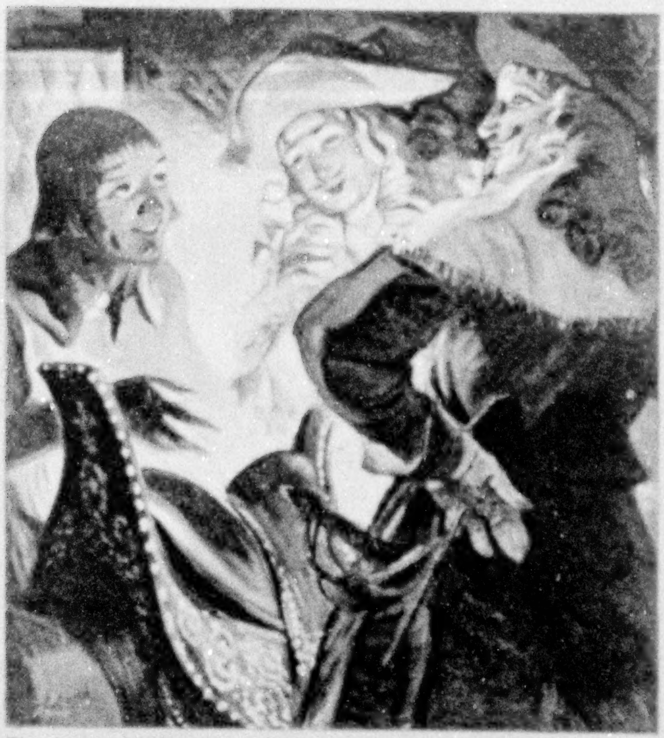
But in combination with the Grebe Synchrophase Seven, it attains its highest capabilities.

The Grebe Natural Speaker is priced at $35; the Grebe Synchrophase Seven at $135. Send for Booklet N; then ask a Grebe dealer to demonstrate both of these Grebe masterpieces in combination.

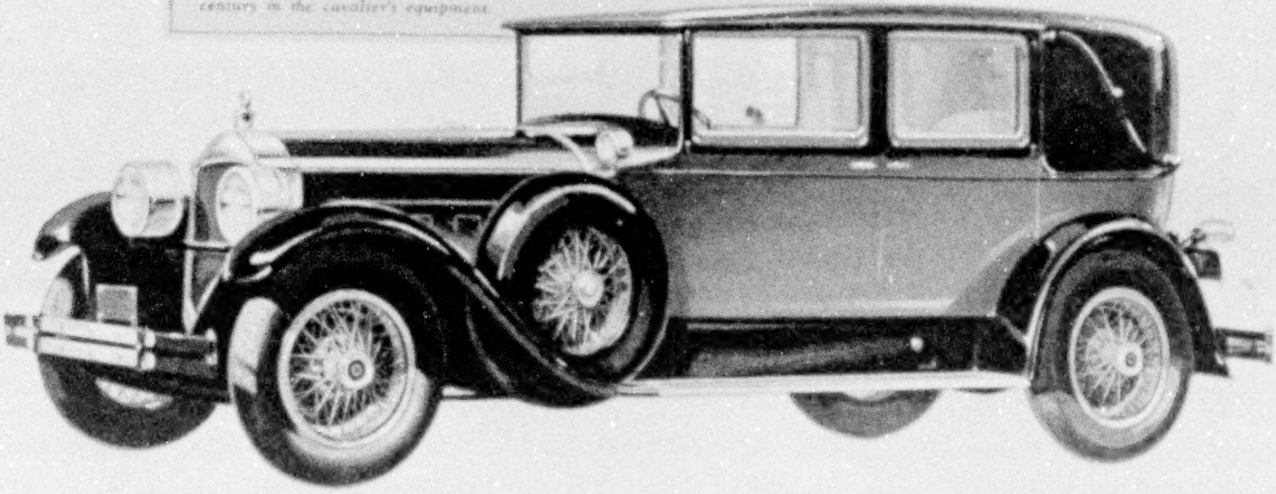


GREBE SYNCHROPHASE
TRADE MARK REG. US PAT. OFF.
RADIO

A. H. Grebe & Company, Inc., 109 West 57th Street, New York City
Factory: Richmond Hill, N. Y. *Western Branch:* 443 S. San Pedro St., Los Angeles, Cal.
The oldest exclusive radio manufacturer



The ancient craft of fine leather-working found expression in the seventeenth century in the cavalier's equipment.



IN leather selection and upholstery work Packard standards are as high and exacting as in the precision manufacture of motor parts.

These requirements prevail in the studios and shops of America's foremost body builders who make a complete selection of custom bodies for both the Packard Six and Packard Eight.

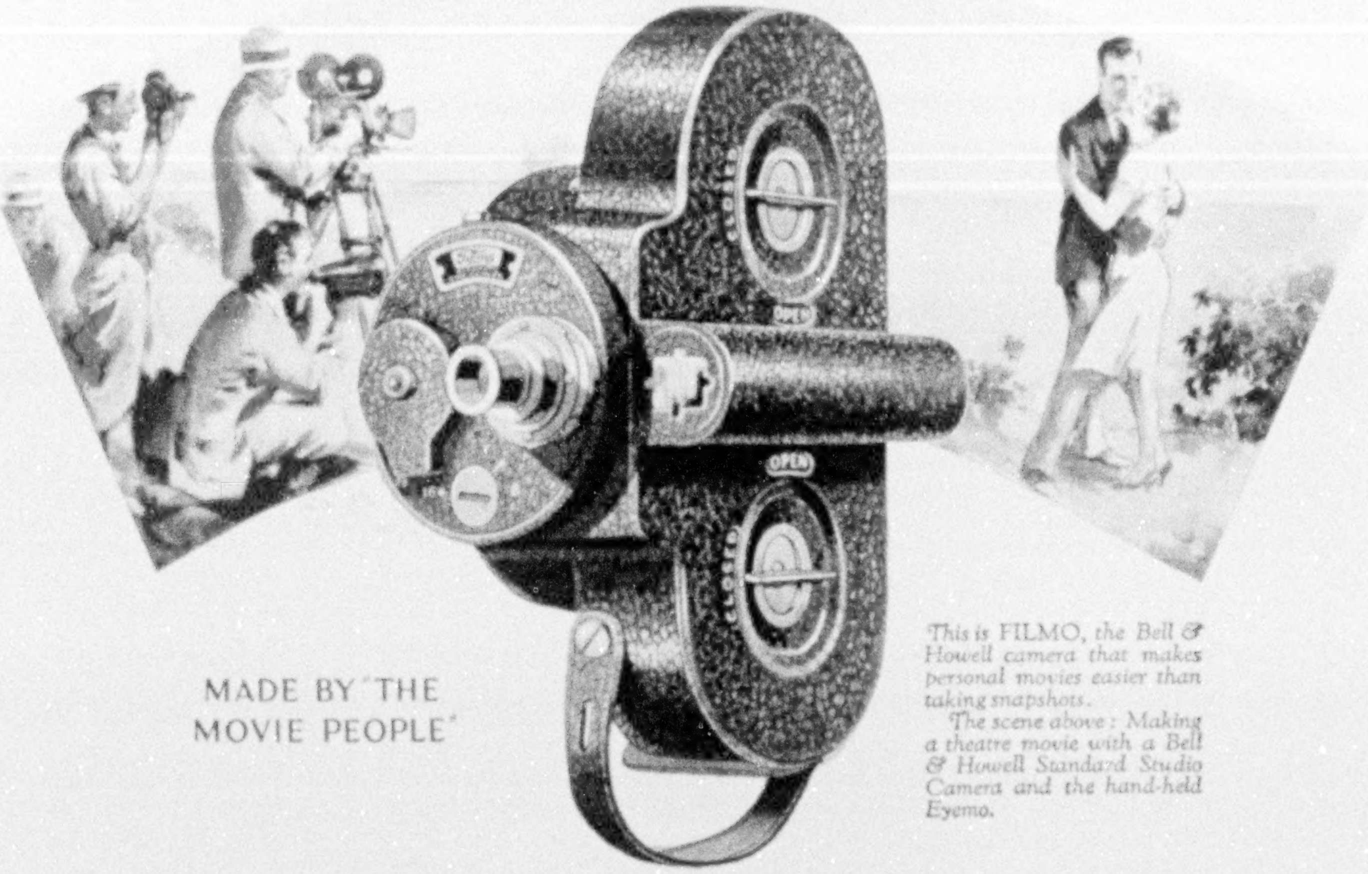
Each body is truly custom-made in the strictest sense of the word. Each bears the name plate of its distinguished maker, signifying that in beauty, comfort and distinction it is one of his masterpieces.

The All-Weather Town Car is one of the most interesting offerings. This may be readily converted from closed to open use by removing the driver's compartment roof and folding back the leather top and quarters.

Custom body builders have long preferred to design creations for Packard chassis. No others afford the slender lines so necessary for yacht-like beauty.

PACKARD

ASK THE MAN WHO OWNS ONE



MADE BY "THE MOVIE PEOPLE"

This is FILMO, the Bell & Howell camera that makes personal movies easier than taking snapshots.

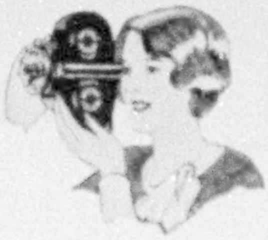
The scene above: Making a theatre movie with a Bell & Howell Standard Studio Camera and the hand-held Eyemo.

For making *better* movies

....*of your own!*

WITH Filmo movie camera you can take personal movies of theatre quality on *the very first try.* For Filmo is made by Bell & Howell, the *movie* people. Bell & Howell cameras have been used, for over twenty years, in making practically all the featured motion pictures *shown at best theatres everywhere.*

Filmo combines absolute *precision* with utmost *ease* of operation. Just think—only two simple operations are required. Look through the spy-glass view-finder, press the button, and "what you see, you get." Easier than taking snapshots. A child can operate Filmo.



"What you see, you get"

Filmo provides all the adaptability needed to take movies indoors, scenes in late afternoon, or on dark or rainy days. Distant scenes or close-ups—they're all the same to Filmo. Anywhere in the world, you need never miss taking a picture with this camera.

Eastman Safety Film (16 mm.), in the yellow box, used in Filmo Camera, is obtained at practically all stores handling cameras and supplies. First cost covers developing and return postage to your door.

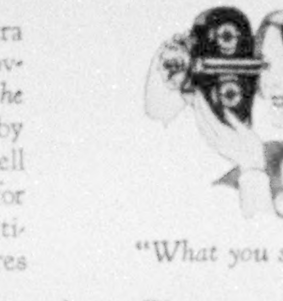
Then Filmo Projector shows your movies with theatre beauty and brilliancy on a wall or screen at home. Simply touch a button to run forward, backward (for novelty effects) or stop on any single picture for prolonged showing.

A Filmo dealer near you will demonstrate the many superiorities of this equipment *made by the movie people.* Write us for the new descriptive booklet "Filmo—Home Movies of the Better Kind."

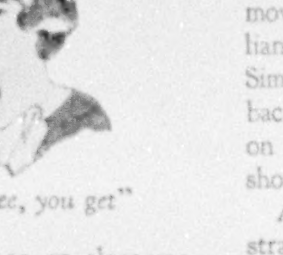
There is also Eyemo—a standard 35 mm. Automatic Motion Picture Camera for those desiring to commercialize their films. Write for circular.

BELL & HOWELL CO.
1817 Larchmont Avenue, Chicago, Ill.
New York, Hollywood, London [B&H Co., Ltd.]
Established 1907

Filmo
BELL & HOWELL
REGISTERED

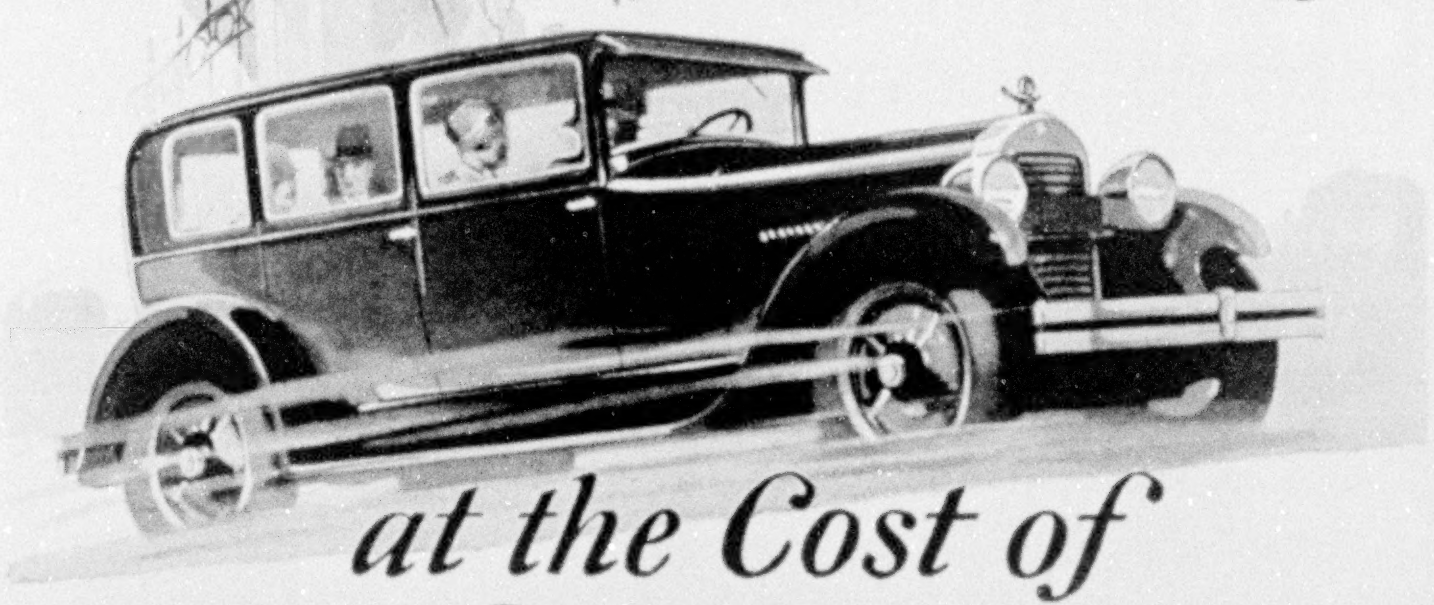


FILMO
Automatic Projector



EYEMO
Standard Hand Camera

ESSEX Created Real Car Luxury



at the Cost of mere Transportation

6-Cylinder Smoothness and Dash—High-compression Power and Performance—Size and Roominess without Unwieldiness—Steady Riding Without Useless Weight—50 Miles an hour all day long—and far greater speed when wanted—Riding Ease Like Gliding—Economy of price, Operation and Maintenance.

Essex alone combines all these. They result from completely original design, with a chassis as brilliantly engineered in every detail as its exclusive Super-Six motor.

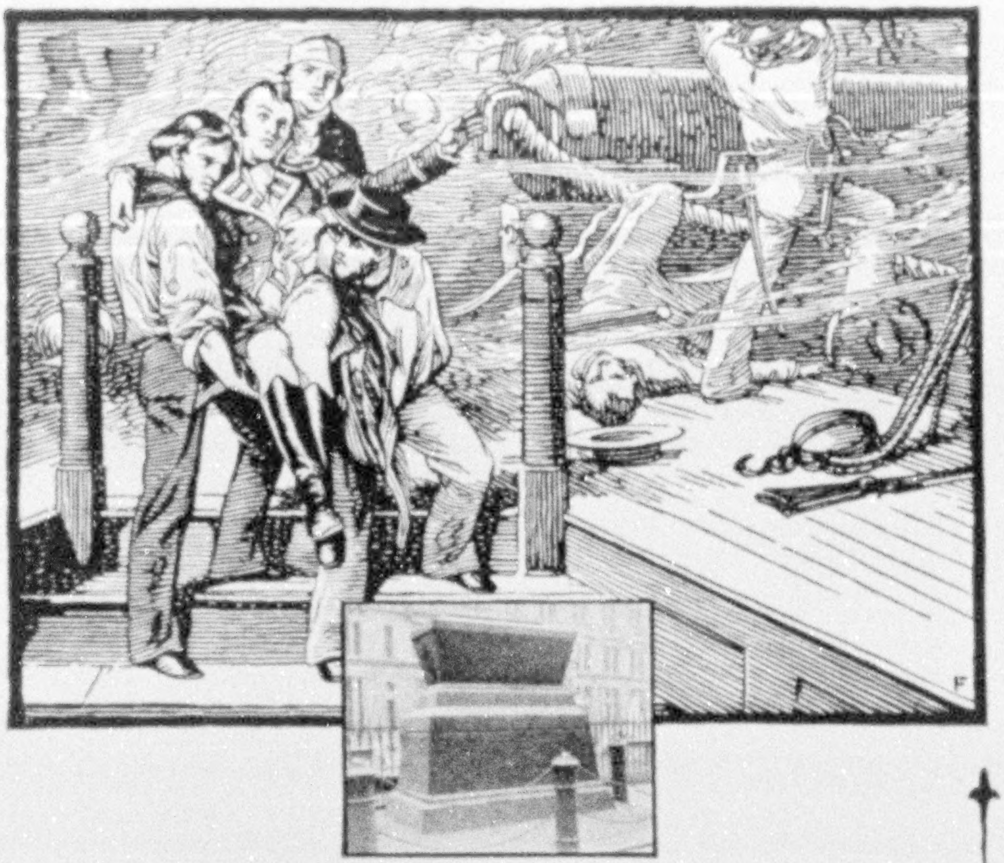
Its Super-Six motor developing more than 2½ times the rated power of this size motor, converts waste heat to power and gives an economy in fuel and oil never associated with such outstanding ability.

Here, at the cost of mere transportation you get luxury, comfort and performance that makes ownership a real joy.

ESSEX SUPER-SIX

2-PASSENGER SPEEDABOUT, $700 4-PASSENGER SPEEDSTER, $835
COACH, $735 COUPE, $735 SEDAN, $835

All prices f. o. b. Detroit, plus war excise tax



Lawrence was killed in a battle between his ship, the "Chesapeake," and the British frigate, "Shannon." He is buried in Trinity Churchyard, New York City.

Your memorial speaks not of grief, but of love — of love so sacred and enduring that you wish to enshrine it forever. Make sure, therefore, that you erect a worthy symbol of that which is in your heart.

Rock of Ages

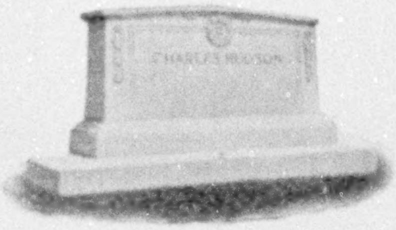
"The Flawless Barre Granite"

Number Nine of a Series

James Lawrence

One of that band of chivalrous spirits whose bravery and self sacrifice raised our infant navy to an honored rank among the nations. His dying words, "Don't give up the ship," have made him, in death, as in life, an inspiration to young American manhood.

"Mark Every Grave"



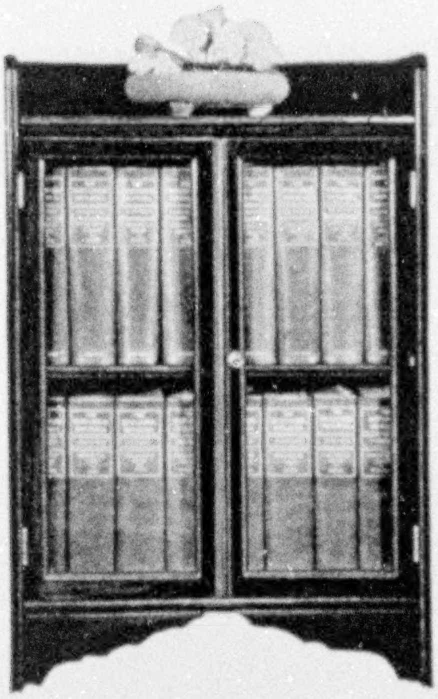
Our Certificate of Perfection, when requested from any memorial dealer, assures you of our personal inspection through the various stages of completion and is your perpetual guarantee against defective workmanship and material.

Write for Booklet "G"

ROCK OF AGES CORPORATION
BARRE, VERMONT

Lowest Price Ever Quoted for a New Edition of the BRITANNICA

in the compact NEW FORM for FAMILY USE



Handsome Bookcase FREE

NOW IS THE TIME for YOU to gratify your lifelong wish to own a set of the ENCYCLOPAEDIA BRITANNICA!

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City..................... *State*...............

The Man everybody should know

The importance of scientific dentistry is becoming more and more evident. And the dentist now plays a leading role in alleviating and preventing serious diseases that were for years of obscure origin. So go to your dentist at least twice a year.

IN the constant war on health no enemy is more ruthless than Pyorrhea. Its poison sweeps through the system, ravaging health, often causing such serious troubles as rheumatism, neuritis and nervousness, stomach disorders and anemia.

Its Toll is Far Too Heavy

The heavy toll demanded by this common enemy is the price of neglect. Four out of five after forty and thousands younger, innocent victims of carelessness, surrender priceless health to Pyorrhea.

Be the Lucky 1 in 5

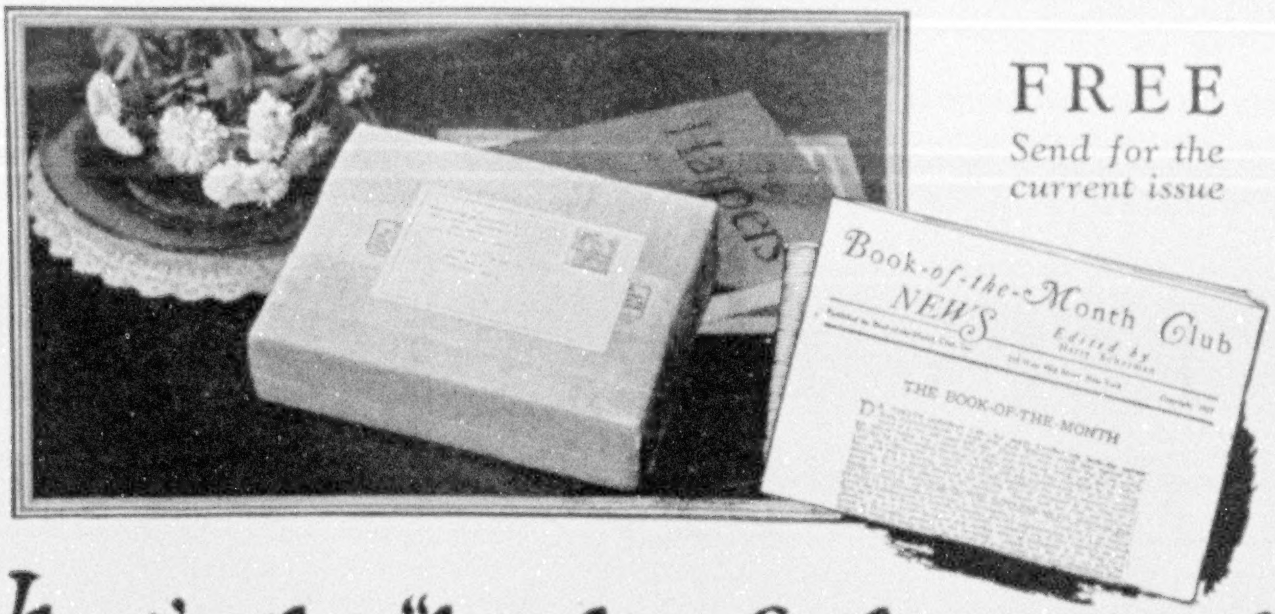
Don't wait for warning signs, for gums to bleed, for teeth to loosen. Take these two simple precautionary measures to protect your good health: Go to your dentist at least once every six months; have him examine teeth and gums, thoroughly Start using Forhan's for the Gums, today. This scientific dentifrice, the formula of R. J. Forhan, D. D. S., for many years a Pyorrhea specialist, is designed to combat Pyorrhea and to keep teeth and gums free from infection.

Use Forhan's regularly, morning and night, and you are safe. It helps to thwart Pyorrhea or to check its course. It firms gums and keeps them healthy. It keeps teeth white and protects them against acids which cause decay.

If you value good health at its true worth take care of teeth and gums. See your dentist, often. Use Forhan's for the Gums, regularly. Teach your children this practice of prevention. Unlike ordinary tooth pastes, Forhan's is health insurance. It contains Forhan's Pyorrhea Liquid used by dentists in the treatment of Pyorrhetic conditions. Get a tube of Forhan's today. All druggists—35c and 60c.

Formula of R. J. Forhan, D. D. S.
Forhan Company, New York

Forhan's *for the gums*



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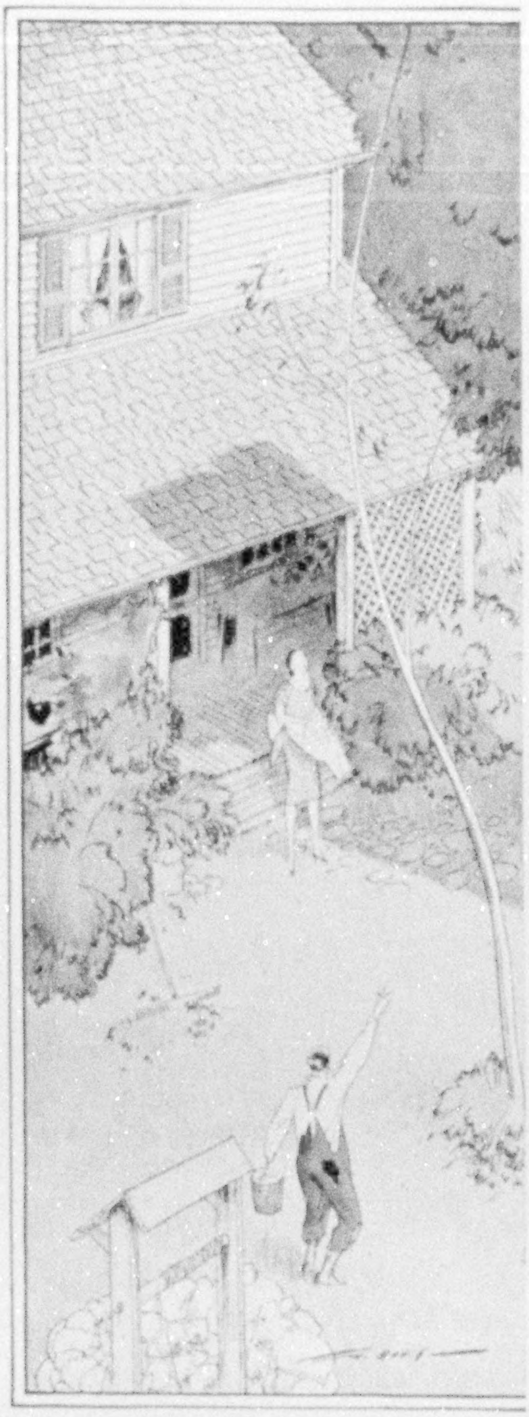
LIFT UP YOUR EYES!



How long ago did Wilbur Wright circle the drill field at Fort Myer while a few score of astonished witnesses stared open-mouthed at the sight of this first man to fly with wings for more than an hour? . . .

How long ago did the intrepid Bleriot hop in his flimsy, scorched monoplane from France to land precariously on the cliffs of Dover? . . .

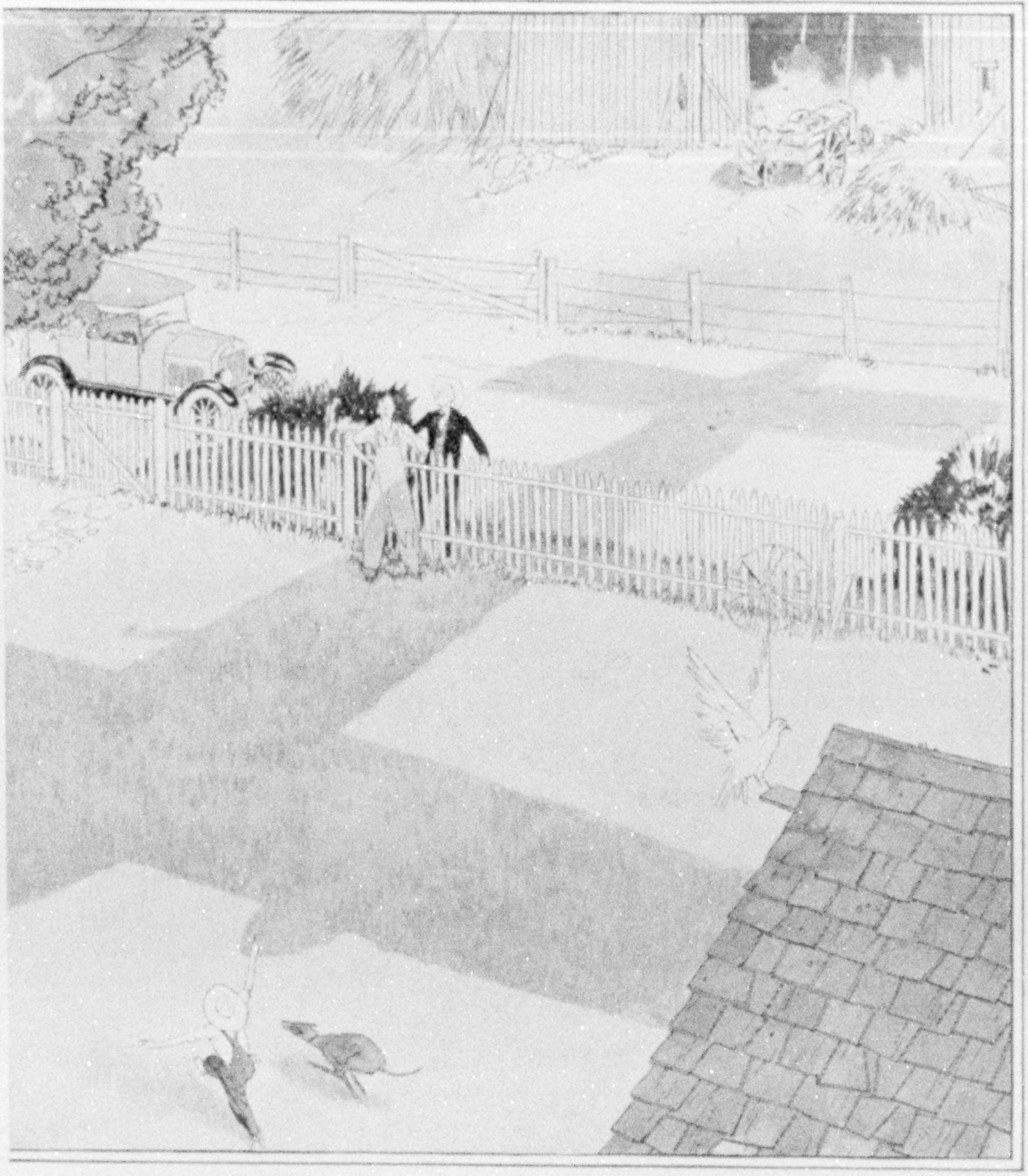
How long ago did Graham-White circle the Statue of Liberty, struggling dexterously with his hands to maintain equilibrium? . . .

It seems only yesterday!

Yet in the few brief years since then man has learned a new technic in existence. He has explored the earth's atmosphere, his noble machine climbing on after human faculties had failed. . . . He has skimmed lightly over the impenetrable ice barriers of the polar regions. . . . He has taken in his flight not only the gray, fog-blanketed waters of the North Atlantic, but the empty blue seas of the South Atlantic—the Mediterranean—the Pacific—the Indian Ocean—the Gulf of Mexico. . . . He has soared confidently over the sands of Sahara and the Great Arabian Desert, where only the camel had dared venture before. . . . He has skimmed the terrible dark jungles of the Amazon, and scaled high above the silent places of Alaska. . . . He has flown in squadrons from the Cape of Good Hope to London. . . . In squadrons he has circled South America. . . . *In squadrons he has circumnavigated the globe!* And in the ordinary routine of transportation service he travels on fixed schedules over airways that streak the skies of Europe and North America. Mail. Passengers. Express. The world is rapidly assigning special duties to this safe vehicle that cuts time in two.

Is there any epoch in all history that has been so sudden in growth from birth to universal achievement? . . . so dramatic in its nature and accomplishments? . . . so rich in promises for the future?

Perhaps the most significant thing in the great accomplishment of young Colonel Lindbergh is that in him the world sees



the first outstanding example of a generation that is born air-conscious! Just as the past generation was born to steam, accepting railway transportation as an accomplished fact—and just as the present generation has accepted the automobile as a customary vehicle—so does the rising generation lift up its eyes to the skies! It may be hard still for many of us to accept the fact, but it is certain that the aeroplane will give as great an impetus to advancing civilization as did the automobile.

In this firm belief the Ford Motor Company is devoting its activities and resources to solving the problems that still face commercial aviation. In factory equipment, in laboratory experiment, in actual flights, the Ford Motor Company is establishing a foundation for one of the greatest industries the world has yet known. Within the last two years pilots have flown over the established Ford air routes, carrying freight, on regular daily schedules, a distance of more than 700,000 miles.

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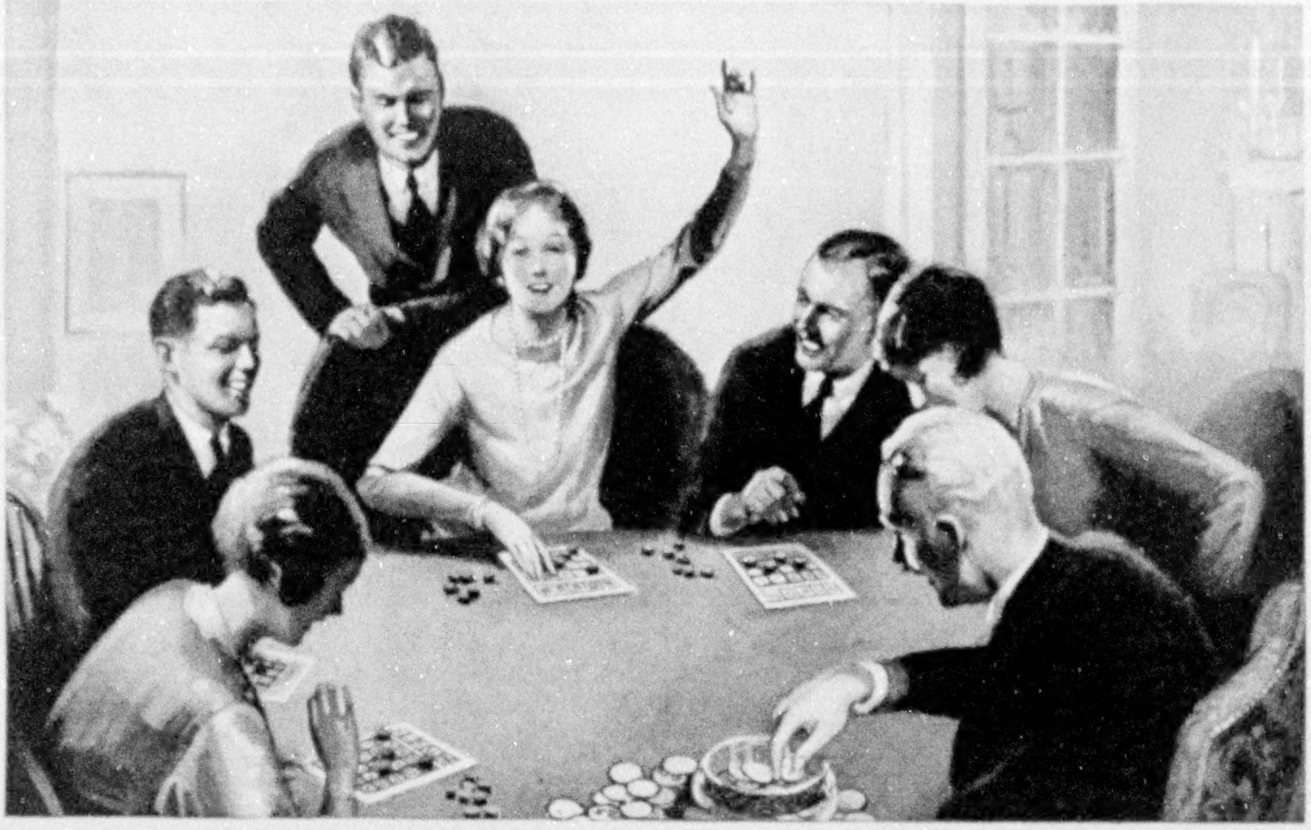

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Across the Continent

I Scoffed

at this new way to learn French

—until I found it was easy as A-B-C

I WAS never so nervous in all my life as I was the night when I took Jacques Lebault to my home to dinner.

Jacques Lebault was a French banker. He controlled a large part of my company's foreign business. The vice-president of my firm asked me if I would mind entertaining Lebault.

While escorting the Frenchman to my home, I discovered to my horror that he spoke only a few words of English. My heart sank. How could we carry on a conversation? I knew only a little French that I had learned in high school.

I did my best to talk to Lebault. But every minute the conversation grew more strained—more halting. When I thought of my wife who was waiting at home to greet us, I grew panic-stricken. She had never spoken a word of French in her life! What would she do?

"Hello, Frank," was my wife's cheerful greeting.

I smiled nervously. My heart beat fast as I introduced Monsieur Lebault to her. The Frenchman bowed low and kissed my wife's hand in true European style.

"Ah, Madame," he said, "enchanté de faire votre connaissance!"

My Big Surprise

Imagine my astonishment! My wife answered Monsieur Lebault *in French!*

"Je suis très heureuse de vous voir," she said.

To my further amazement, my wife *continued to talk French* with Monsieur Lebault. All during dinner she chatted away — gaily — easily — as if French was her native language. The Frenchman was delighted.

When he departed he was all smiles. "Merci, Madame! Merci, Monsieur!" he cried, thanking my wife and myself for our hospitality.

"Jane!" I exclaimed excitedly to my wife when we were alone. "Where on earth did you learn to speak French?"

Jane laughed. "Do you remember that advertisement I showed you a few months ago?" she asked—"that advertisement for a new kind of French course? Do you remember how you scoffed at it?—how you said it would be foolish to try to learn French without a teacher?"

I nodded.

"Well, Frank," said my wife, "I hated to give up the idea of learning French. And it didn't cost anything to see what the course was like, so I decided to send for it.

"Honestly, Frank, the course was wonderful—so simple—so easy! It's called the 'At-Sight' method. It is a method of learning French recently perfected by the Hugo Institute of Languages over in London.

"The authorities of the House of Hugo have condensed all their knowledge of language instruction—their years of experience in teaching French—the secrets of their wonderful method—into a course of lessons *which anyone can study at home!*

"It was easy as A-B-C learning French this new way. The 'At-Sight' method required no laborious exercises—no tiresome rules—no dull classroom drills. It was actually fun learning. I didn't study much—just a few minutes a day. And in a short time I was able to speak French—read French books and magazines—and understand French when it was spoken to me."

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This story is typical. You, too, can now learn French at home—quickly, easily, pleasantly—just as thousands of others are doing by the celebrated Hugo "At-Sight" Method. Twenty-four fascinating lessons, carefully planned. The most ingenious method of learning French ever discovered!

We shall be glad to send you the complete course FREE for 5 DAYS, so that you may see it and judge for yourself. Within the free examination period you have the privilege of returning the course without cost or obligation, or keeping it as your own and sending only $2 as a first payment, and thereafter $2 a month until the full price of $12 has been paid.

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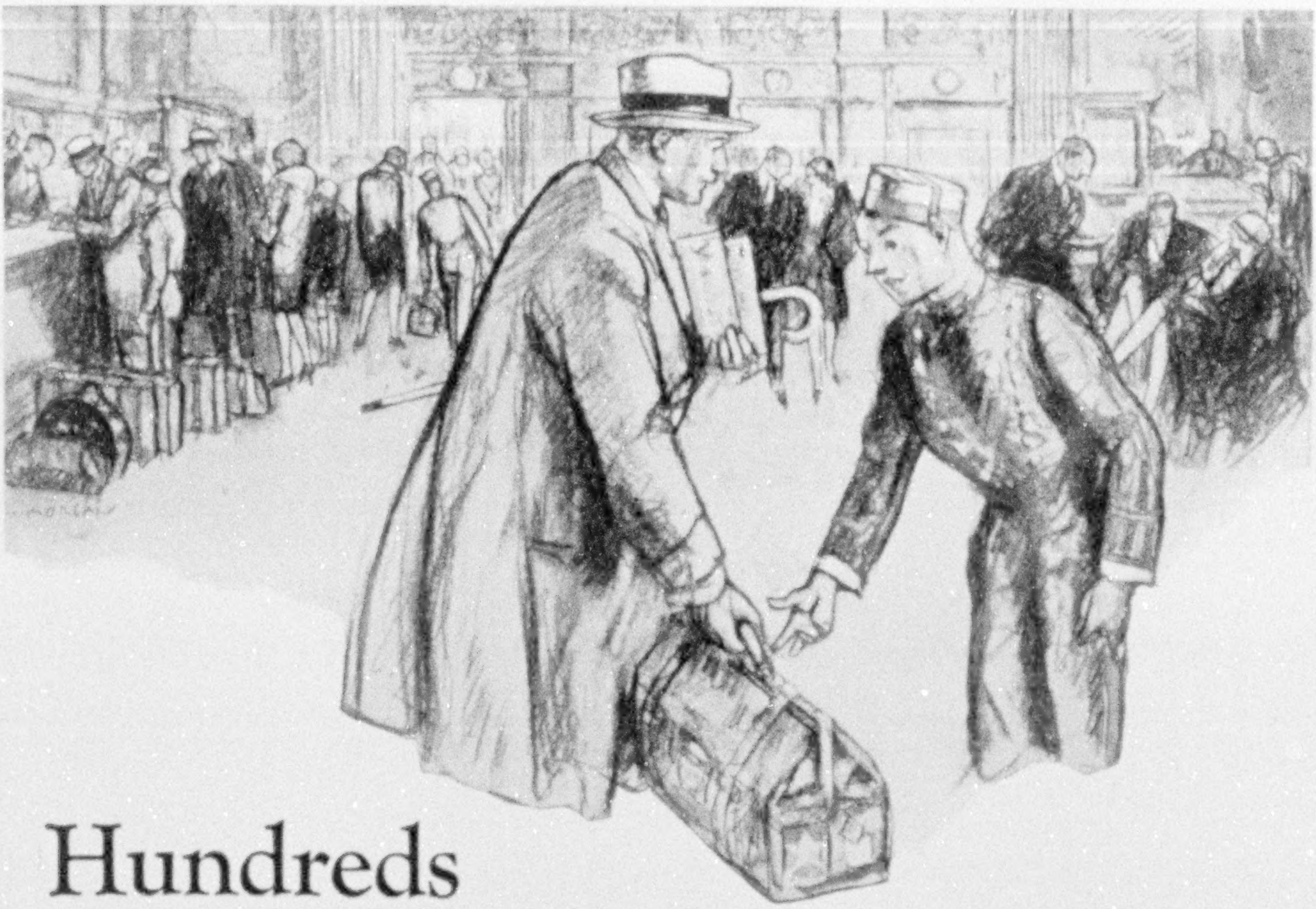

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The natural method of learning is eye-learning. Your children ask, "Where does the day begin?" "Why is it dark at night?" "What holds a bubble together?" When you explain, what is it you do? You try to make them SEE. You draw a mental picture for them, because pictures are short-cuts to understanding. There are, in The Book of Knowledge, 15,000 striking educational pictures, in color, gravure and black and white. Interestingly, vividly, at a glance they show the life-stories of plants and animals, the deeds of history, the treasures of art, the workings of machinery and the discoveries of science in a way that words alone could never do.

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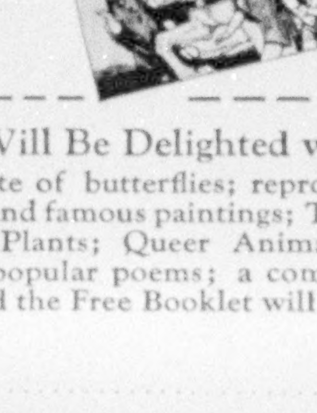
The pictures lead the children's attention naturally to the text, and they will spend hours at a time reading one after another of the fascinating chapters. This wonderful educational plan is the idea of a father who loved his child and was determined to give him the best possible start in the race for knowledge. Now The Book of Knowledge is in the homes of more than 2,000,000 children, has been translated into five foreign languages, won eleven great international medals and is endorsed by parents and educators everywhere. As one mother writes: "There is something missing from the lives of children who grow up without it."



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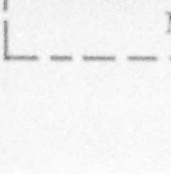

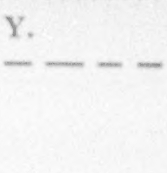

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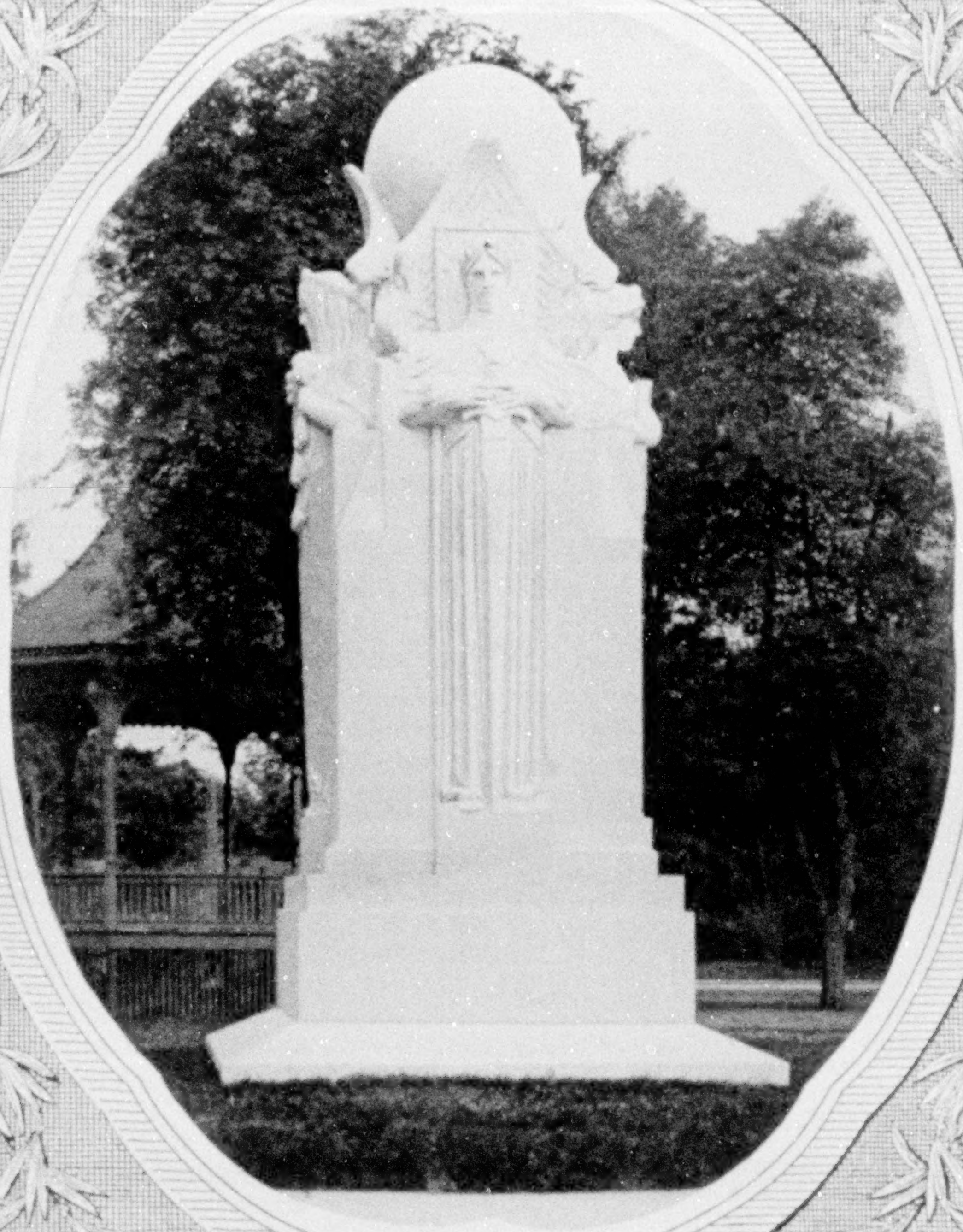

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WHERE LIFE IS BETTER

Giant redwoods, 30 centuries old, reach from San Francisco to Oregon

45 minutes from the tall office buildings of downtown San Francisco

Come out this winter—look at a California suburban garden

Here in California we can pick some kind of fruit and many kinds of flowers any day in the year.

If you should make your home in or near San Francisco, you would find life full of new contrasts and new comforts. Partly, that is why three and a half million people who were born in other states are now *Californians*—permanently.

Partly, too, it is because they prosper here, where they have brought their ability and their capital. In comparison with the average American family, the California family has *twice* the average wealth, owns *twice* as many automobiles, puts *twice* as much money in the savings banks; and *twice* as many of them pay income tax.

First—come and see

In San Francisco you will see on every hand the evidence of this statewide prosperity. Practically all of the great agricultural wealth produced in the Great Valley of California pours into San Francisco. San Francisco's manufacturing production is more than a billion dollars yearly. Imports and exports run into hundreds of millions.

This Autumn or Winter will be a good time to come to San Francisco and see for yourself. You will find us hard at work with our $700,000,000 farm crop, our timber and oil and mineral products. Yet you will see us playing golf on sunny mid-Winter days, sailing on San Francisco Bay, motoring on open highways, spending a week-end in nearby Yosemite. What you will see will make *you* want to live here too.

This man came—and stayed

San Francisco, August 1, 1927.

"Twenty years ago I sat on the courthouse steps of a small city near San Francisco, with my suitcase beside me, and picked that city as the place where I would establish a big business.

"There was not a building over four stories high within sight on the main street. Today this city is large enough to be known throughout America, yet it has never known a sudden burst of growth. There are big modern buildings everywhere; traffic policemen stationed at business corners miles away from the center of the city. The new business which I started then has grown with the city, year by year, and has become one of the leading establishments of its kind in the country. With adequate capital, I could start another business here today as confidently as I did then.

California

THE GREAT VALLEY
San Francisco
California
WHERE LIFE IS BETTER

A sailor of the seven seas returns to his home port—San Francisco

What *every* *San Franciscan* owns:

Climate: Average 59° in summer; 51° in winter. Less rain falls in San Francisco's wettest month (January) than in Atlantic Coast cities in July. No extremes of heat or cold.

Recreation: San Francisco is America's coolest summer city. At the middle of a thousand miles of seacoast, and the hub of railroads and highways leading to four national parks and millions of acres of mountain playgrounds.

Markets: Geographical and commercial center of Pacific Coast. The chief seaport, carrying 40% of all imports and exports. Over 1,000,000 people in the San Francisco metropolitan area.

Industry: San Francisco Bay District's manufacturing production exceeds a billion dollars a year.

Growth: Seven times as great, from 1921 to 1926, as the rate of growth of the country at large—seven times as many new customers each year for San Francisco business.

Art, Music, Literature: The cultural capital of the West with a widespread artistic, musical and literary life among its people. One of the three colorful "story cities" of America.

Crop Wealth: The outlet and commercial headquarters for bulk of California's $700,000,000 annual farm production.

For every San Franciscan, here or on the way, these advantages spell *opportunity*

"With our home in the city and a week-end place in the hills, the seashore right at hand and the mountains not far away, California has furnished unending opportunities for year-around pleasant living. Like all Californians, I count these opportunities among the greatest of my assets."

(*Name on request*) "J. N. B."

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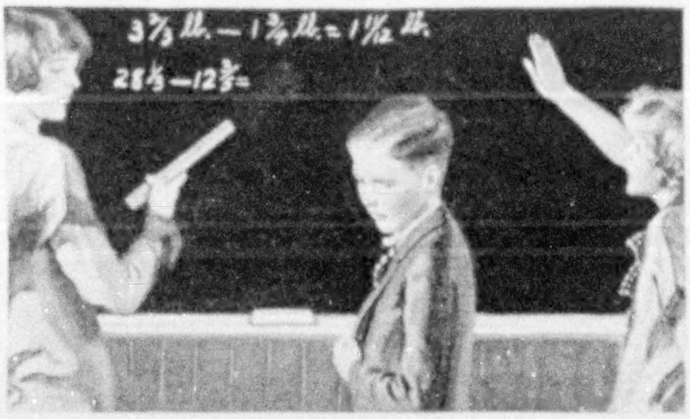
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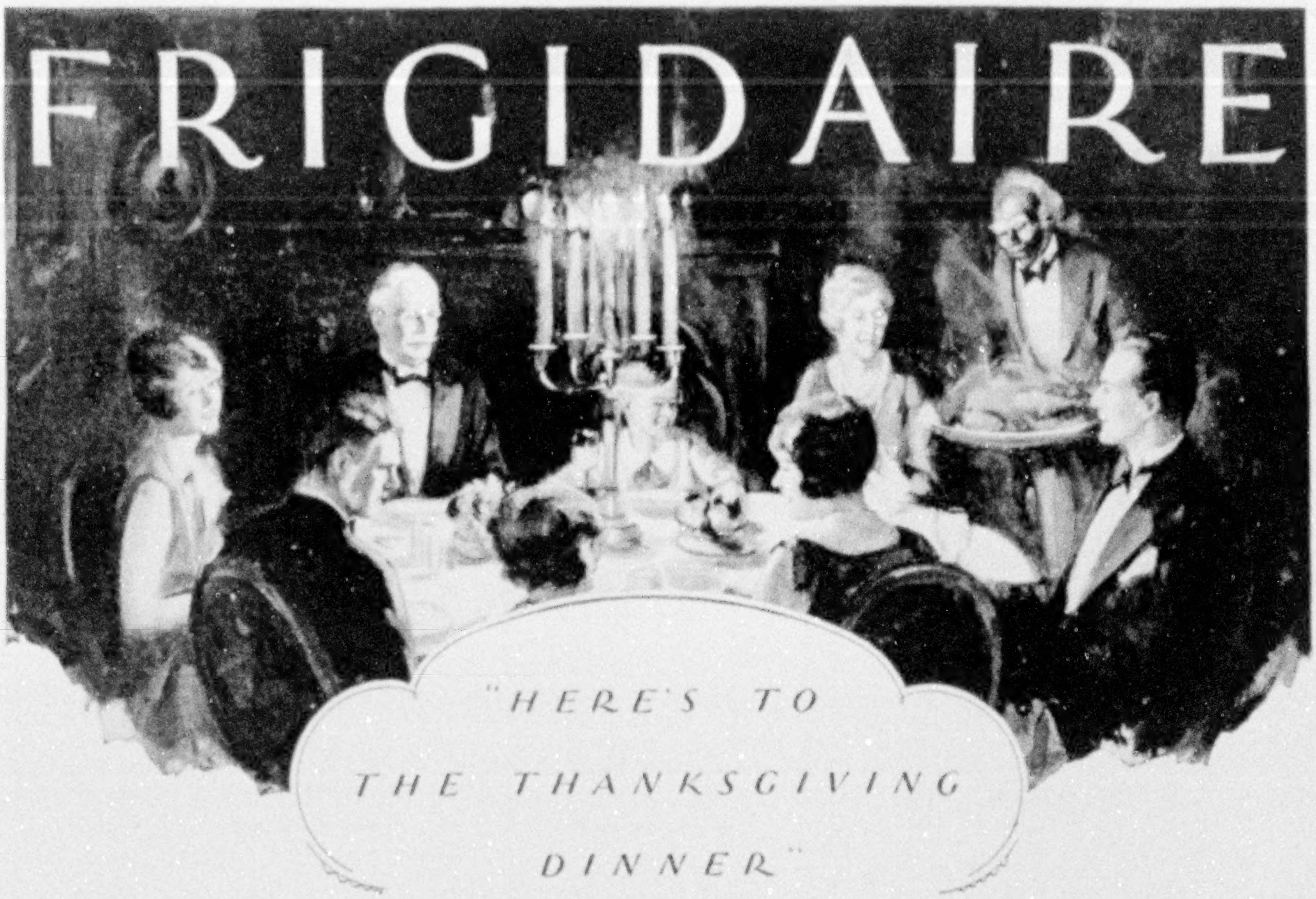
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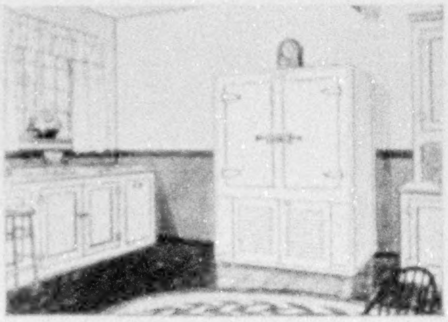

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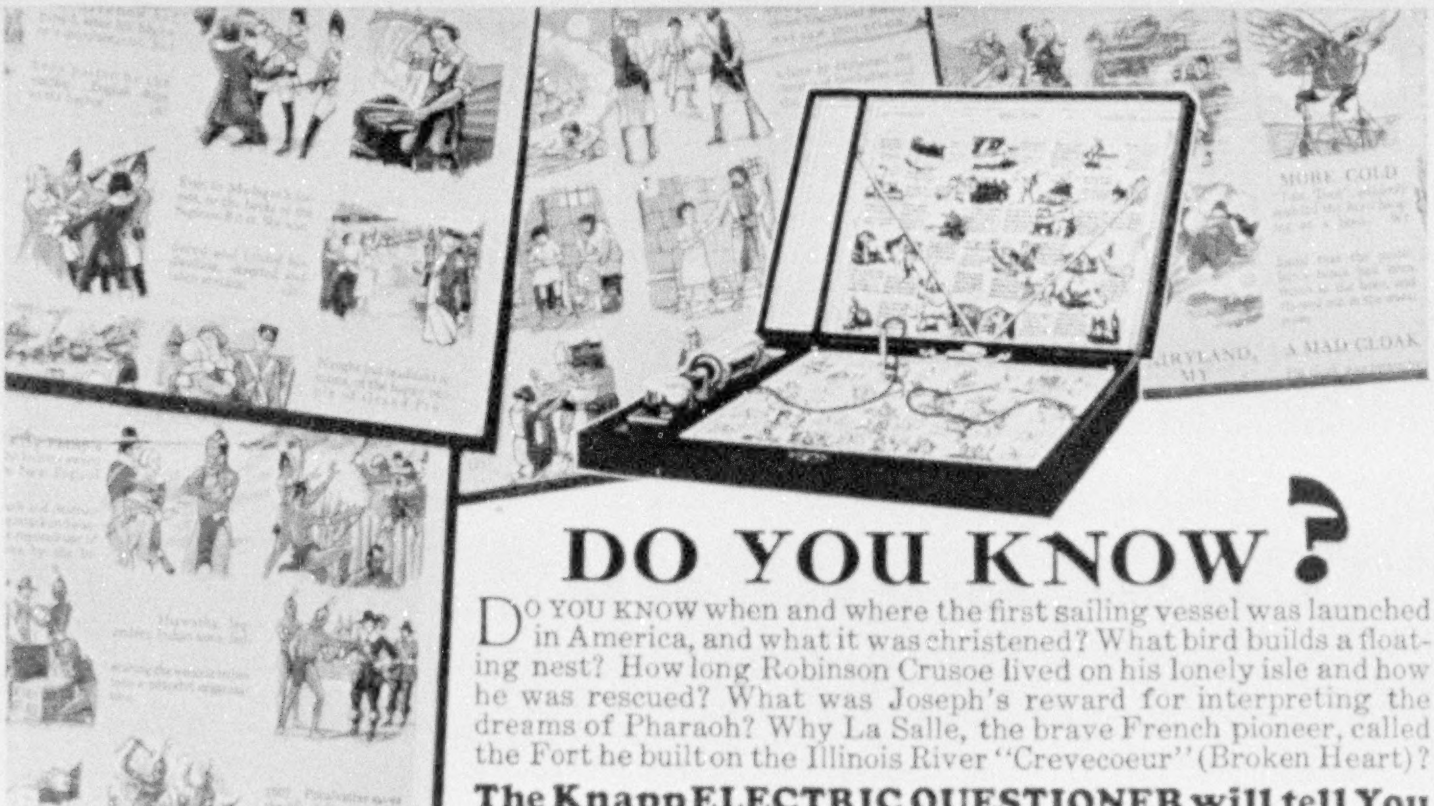

DO YOU KNOW?

DO YOU KNOW when and where the first sailing vessel was launched in America, and what it was christened? What bird builds a floating nest? How long Robinson Crusoe lived on his lonely isle and how he was rescued? What was Joseph's reward for interpreting the dreams of Pharaoh? Why La Salle, the brave French pioneer, called the Fort he built on the Illinois River "Crevecoeur" (Broken Heart)?

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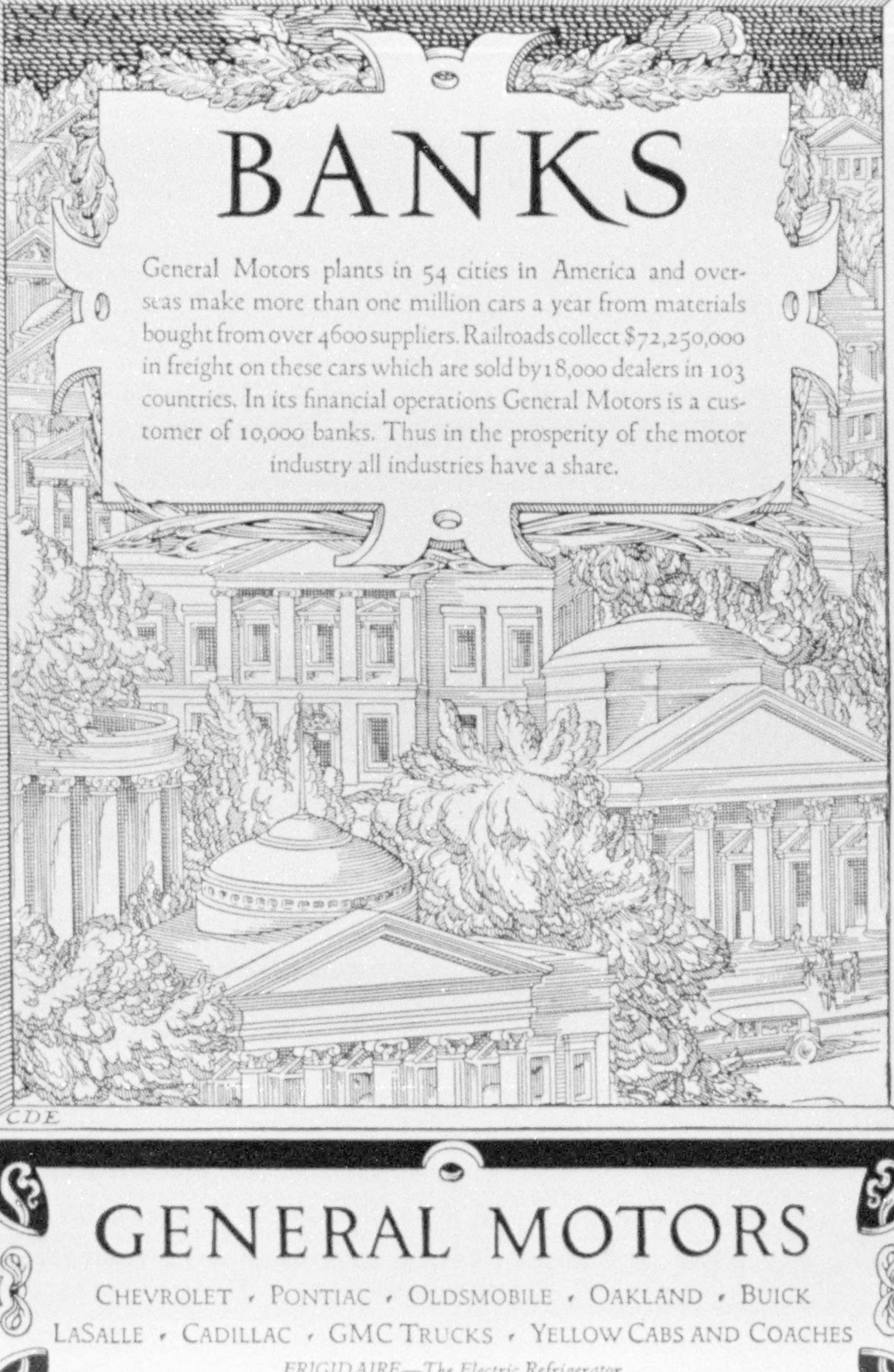

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Results prove the big majority of men who *try* Palmolive Shaving Cream stick to it. For they find the things we say are true. And they tell others, in extravagant terms, things we would never dare to claim.

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Simply insert your name and address and mail to Dept. B-1421, Palmolive, 3702 Iron Street, Chicago, Ill. Residents of Wisconsin should address Palmolive, Milwaukee, Wis.

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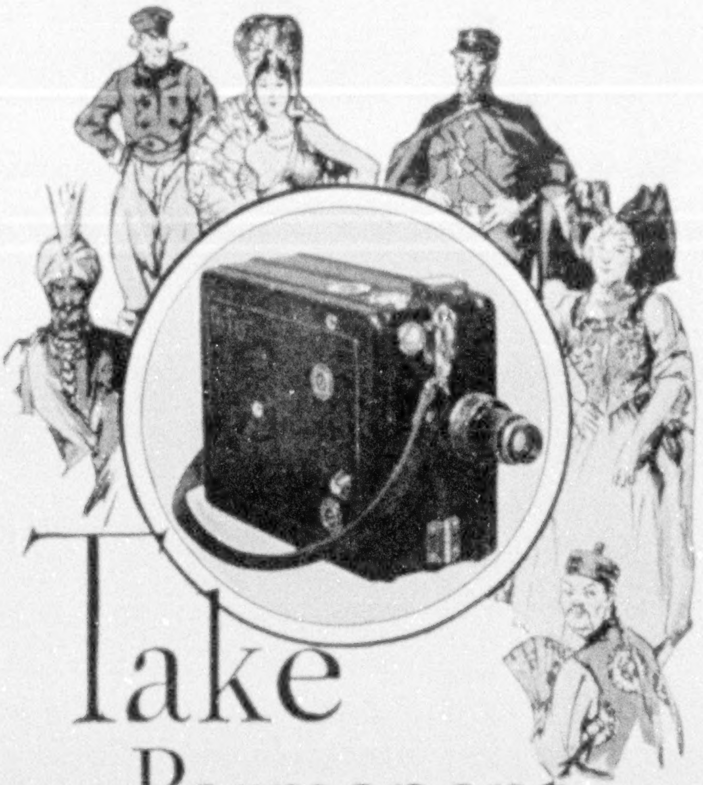

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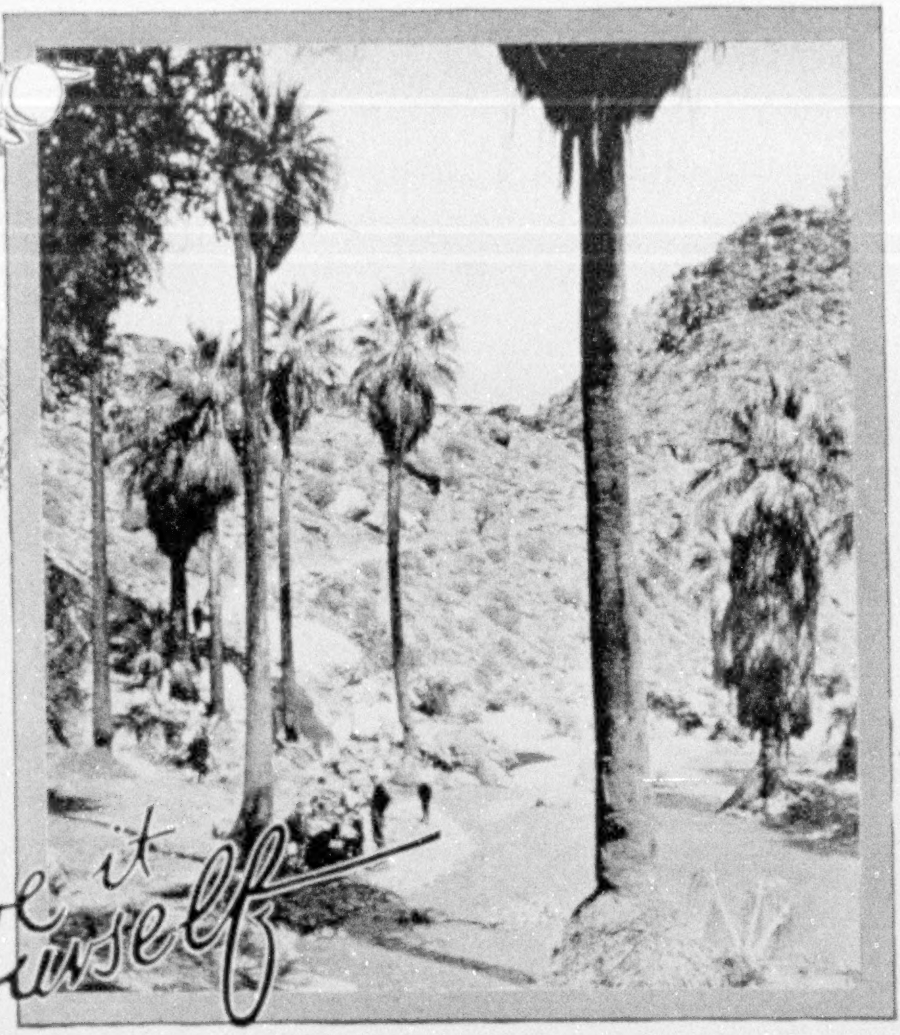


Palm Canyon, near Palm Springs—an alluring desert oasis

Prove it yourself

"Winter" is Only a *Name* in Southern California~

ALL the climatic wonders of the Mediterranean resorts await you in Southern California this winter. Here cool, dry, energizing mountain air is tempered by the genial sunshine that makes valleys bloom and oranges ripen and blossom at one time. Roses and poinsettias are everywhere! Pasadena's New Year's Tournament of Roses is world-famed and a fascinating picture.

Less than an hour from Los Angeles are the mile-high, snow-bound Sierra Madres! A day's motoring puts you into the incomparable Yosemite or into the Owens Valley where vistas of the High Sierras will amaze and inspire.

Drive to the winter desert in three hours. Enjoy comfortable relaxation in its beautiful oases. Visit Old Spanish Missions. Motor through palm-lined canyons. Loaf by the sea at Santa Barbara, Ventura, or San Diego. Make sure that your itinerary includes Riverside, San Bernardino and Orange.

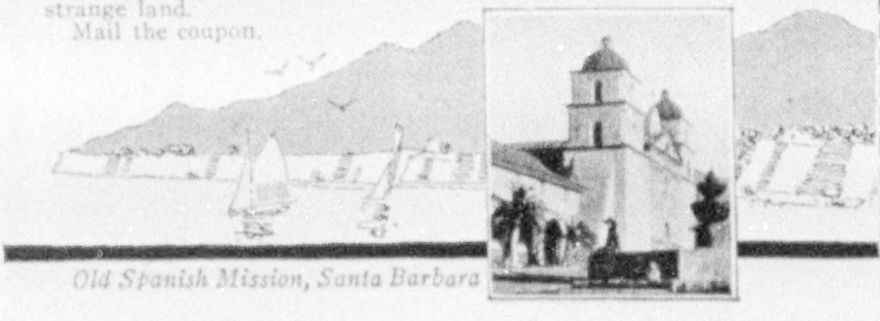
See the remarkable growth of Los Angeles and Los Angeles County, one of the country's richest. During 1926 the county's live stock, agricultural and citrus products totaled $116,500,361. Oil fields contributed 122,584,276 barrels. Los Angeles port business amounted to 22,094,976 tons.

Plan *now* to come this winter, before Christmas, if you can. See your nearest ticket agent. Return via San Francisco, Oakland, Portland, Seattle, Tacoma and Spokane. See the *whole* Pacific Coast in one glorious trip.

WE HAVE issued one of the most complete books on vacations ever printed. 52 pages, illustrated, tell you just what you can see and do in this strange land. Mail the coupon.

Southern California

"A trip abroad in your own America!"



Old Spanish Mission, Santa Barbara

All-Year Club of Southern California,
Dept. E-11, Chamber of Commerce Bldg.,
Los Angeles, California.

Please send me your free booklet about Southern California vacations. Also booklets telling especially of the attractions and opportunities in the counties which I have checked.

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☐ San Bernardino
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☐ Santa Barbara
☐ San Diego
☐ Riverside
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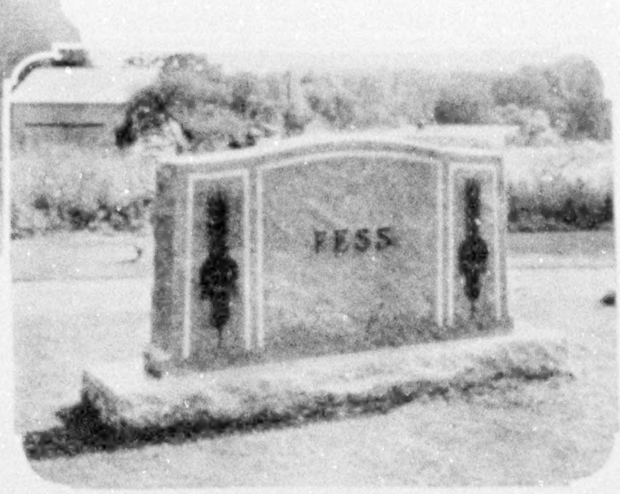
At left: Houston Family Mausoleum at South Charleston, Ohio, in Victoria White Granite.

Below: Memorial to the family of U. S. Senator Simeon D. Fess. Stony Creek Granite with Bronze ornamentations.



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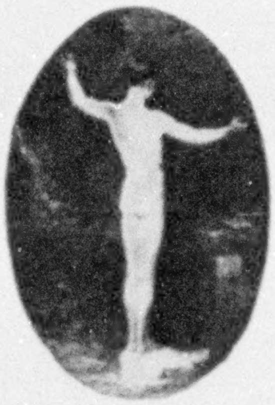

"The Bathers" ©

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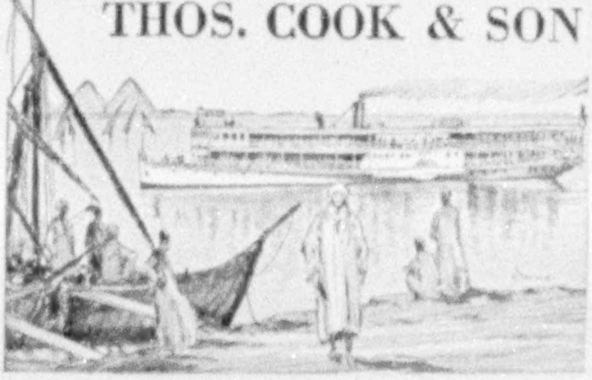

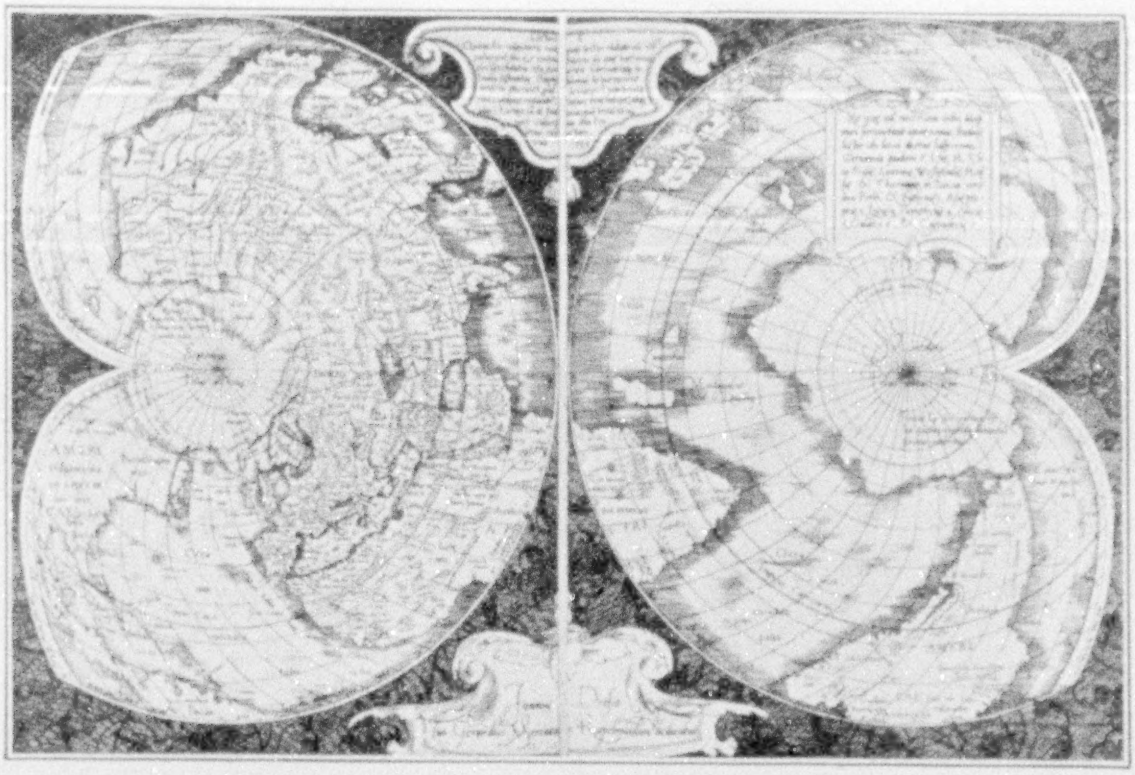

First to call it North America

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Interesting at first sight only because of its age and the fineness of its workmanship, this map by Mercator is a rare and almost forgotten museum piece. Hardly a book mentions it.

Yet in its day it had an influence that few works of the human mind have had in all the history of the world.

It was first to give the name of North America to the continent on which we live. And it indicated a Northwest Passage around this continent through which Europeans might sail to the Indies.

Thus it served to perpetuate a belief that might otherwise soon have died. Directly, therefore, it was largely responsible for a number of important voyages of discovery, notably Drake's, Frobisher's, Hudson's. Indirectly, it was in part responsible for the spread of empire on this continent.

For great indeed is the inspiration of maps for the human imagination.

The maps of today, it is true, have led to few important discoveries. Our planet has been pretty well explored already. Yet maps today still have the power, as they had in the sixteenth century, to arouse in us a desire to see and to know other parts of the world than our own.

Fascinating, packed with the delights of unexpected finds, rich in historical and literary suggestion, maps and atlases have all the charm and cultural value of the world's best books.

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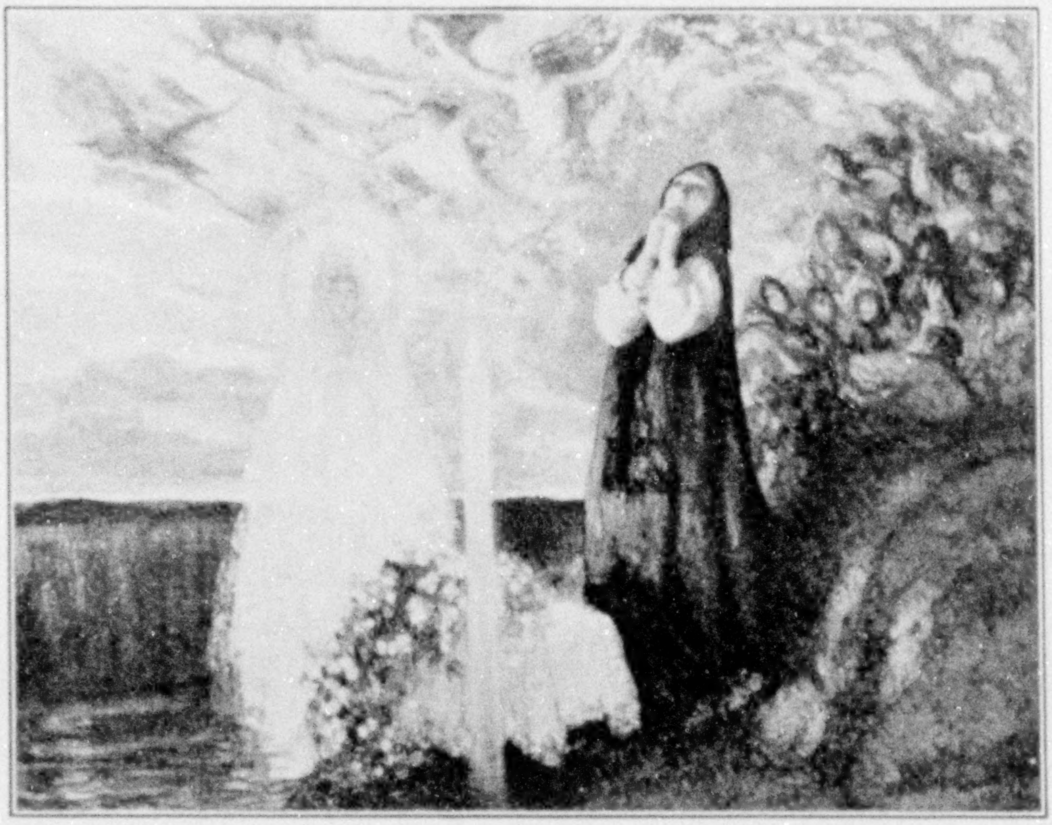
STEINWAY

THE INSTRUMENT OF THE IMMORTALS



HARMONIE RELIGIEUSE, *painted for the* STEINWAY COLLECTION *by* F. LUIS MORA

It has been said of the music of Franz Liszt that it glows and smoulders like a living coal—now shot with rays of white religious light, now darkening with eerie gypsy glints. In turn tumultuous and meditative, alternately tender and unrestrained, it bears on every page the mark of unexampled brilliance and imaginative force.

It is a significant commentary upon modern society that one no longer asks: "Shall we buy a piano?" but rather: "What piano shall we buy?" . . . For cultivated people today have come to realize its importance as a moulder of youthful tastes, as an addition to exquisite interiors, as a medium for experiencing the joy and gratification of the personal, intimate performance.

And today the question "Which piano?" receives the same answer that it had when Franz Liszt chose the Steinway as his personal instrument, 50 years ago. In point of tone, durability, and excellence of craftsmanship, it has never been approached by any other instrument. For generations it has been the choice of almost every musician of note. In the fullest sense, it is "The Instrument of the Immortals."

Yet the Steinway is primarily a piano for the home, and particularly for the home of limited income. For the lifelong service which is built into this instrument—extending over periods of 30, 40, and even 50 years or more—is an index of that true economy which lies in the best and finest things. No matter which of the many styles and sizes you select, you may rest assured that you need never buy another piano. The Steinway is a permanent musical investment.

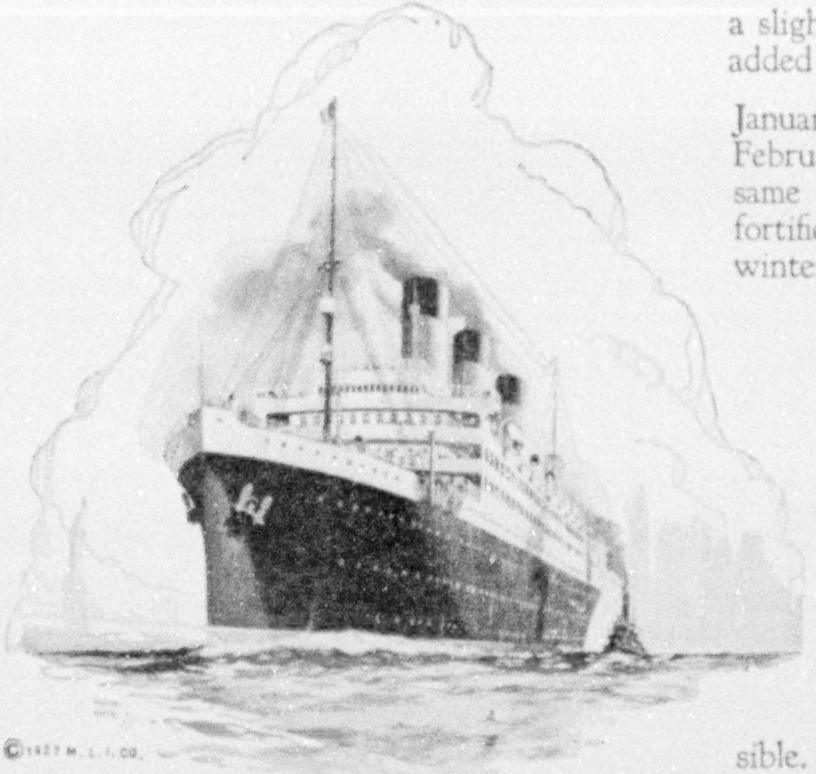
There is a Steinway dealer in your community, or near you, through whom you may purchase a new Steinway piano with a small cash deposit, and the balance will be extended over a period of two years. Used pianos accepted in partial exchange.

Prices: $875 *and up*

Plus transportation

Steinway & Sons, Steinway Hall
109 West 57th St., New York

Ship-shape Condition



©1927 M. L. I. CO.

THE last cable is off—the whistle blows—and the great liner starts on another long voyage. As the shore line fades away, veteran and inexperienced travellers alike, can only guess what the future holds in store. But they know that before the ship sailed, every vital part was given painstaking inspection. All during the voyage the same watchfulness will be continued. The captain is ready to meet heavy seas, for in fair weather he has prepared for storms.

Each of us, during the autumn, bears a strange resemblance to a ship leaving port. Some, sturdy and sound, ready for what may come; others weak and unfit for a crisis; still others needing only a slight overhauling to qualify them to meet the added hazards which the winter months bring.

January claims more deaths than December, and February more than January. Year after year, the same thing occurs—because people have not fortified their bodies to meet the rigors of the winter.

Then follows March—March called the "danger month" because it is then that neglected colds suddenly change from seemingly unimportant discomforts to deadly menaces. Tired hearts and racked lungs make only a feeble fight for life. All too many people live an abnormal life in the winter time. They eat too much. They do not get enough exercise—enough fresh air.

Exercise in the open whenever it is possible. But if you have no time or opportunity for outdoor exercise you will find that intelligent daily indoor exercise in a properly ventilated room is a fine substitute—a daily tonic.

But, first of all, have a physical examination. If there are any defects which can be corrected see that they are given immediate attention.

It is a real cause for thanksgiving that this is only November and there is still plenty of time to make preparations to sail safely through the "danger month". You who are wise will fit yourselves to meet the approaching winter months in ship-shape condition.

THE LIGHT THAT NEVER FAILS

In March, the danger of death from all forms of Pneumonia is more than four times as great as in mid-summer.

Statistical records show that in November, 1926, 8,000 persons died of Pneumonia. In December 11,400 persons died from the same cause. In January, 1927, 16,200. In February 15,000. And in March 17,000.

March is also the peak month for colds and for deaths from heart disease and tuberculosis.

More children die of measles in that month than in any other month of the year.

The Metropolitan Life Insurance Company has prepared a series of simple exercises aimed to develop the body and keep it in sound physical condition. An exercise chart and two valuable booklets, "Commonsense in Exercise" and "The Prevention of Pneumonia" will be mailed free of charge to anyone who writes for them.

HALEY FISKE, *President.*

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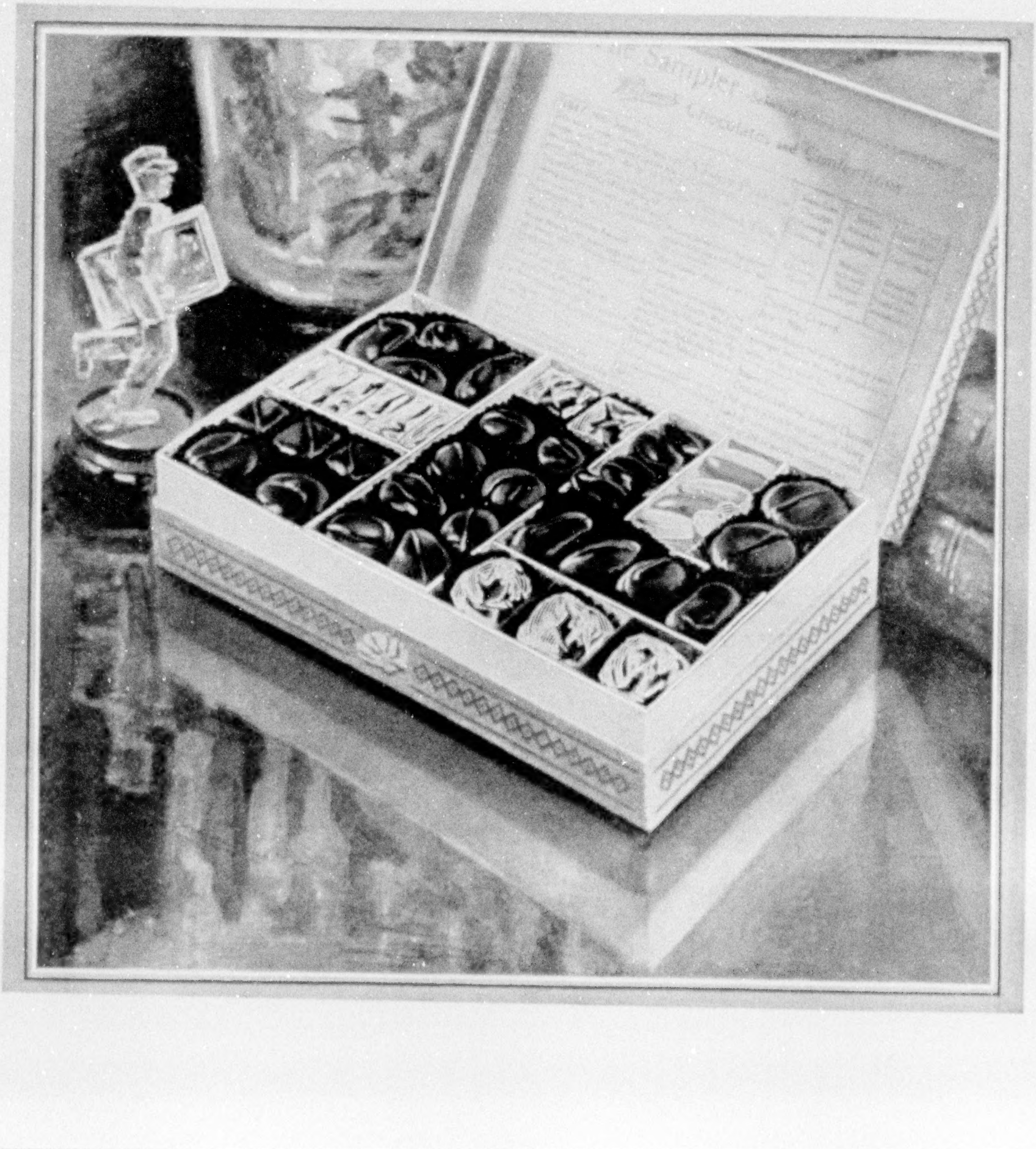
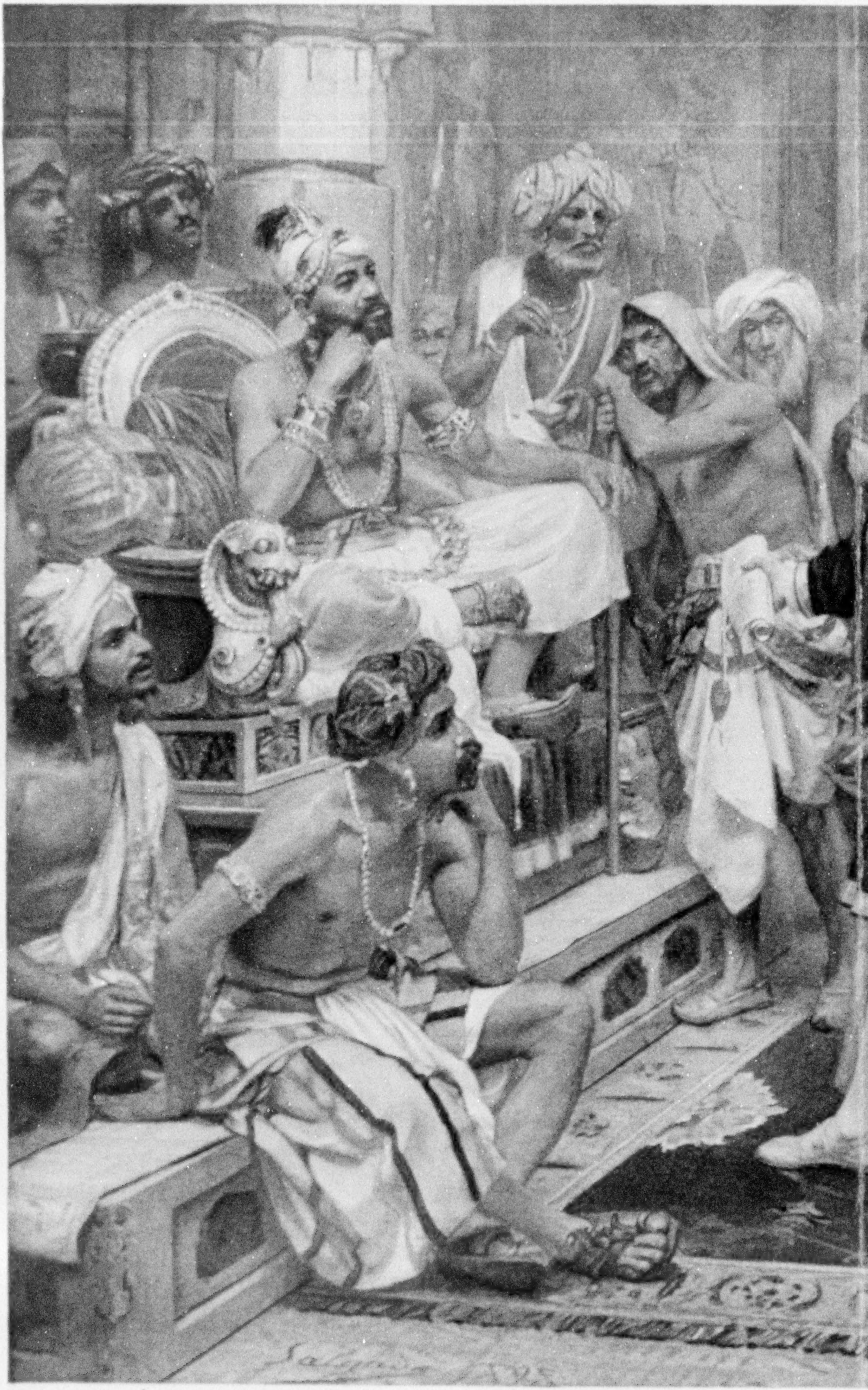
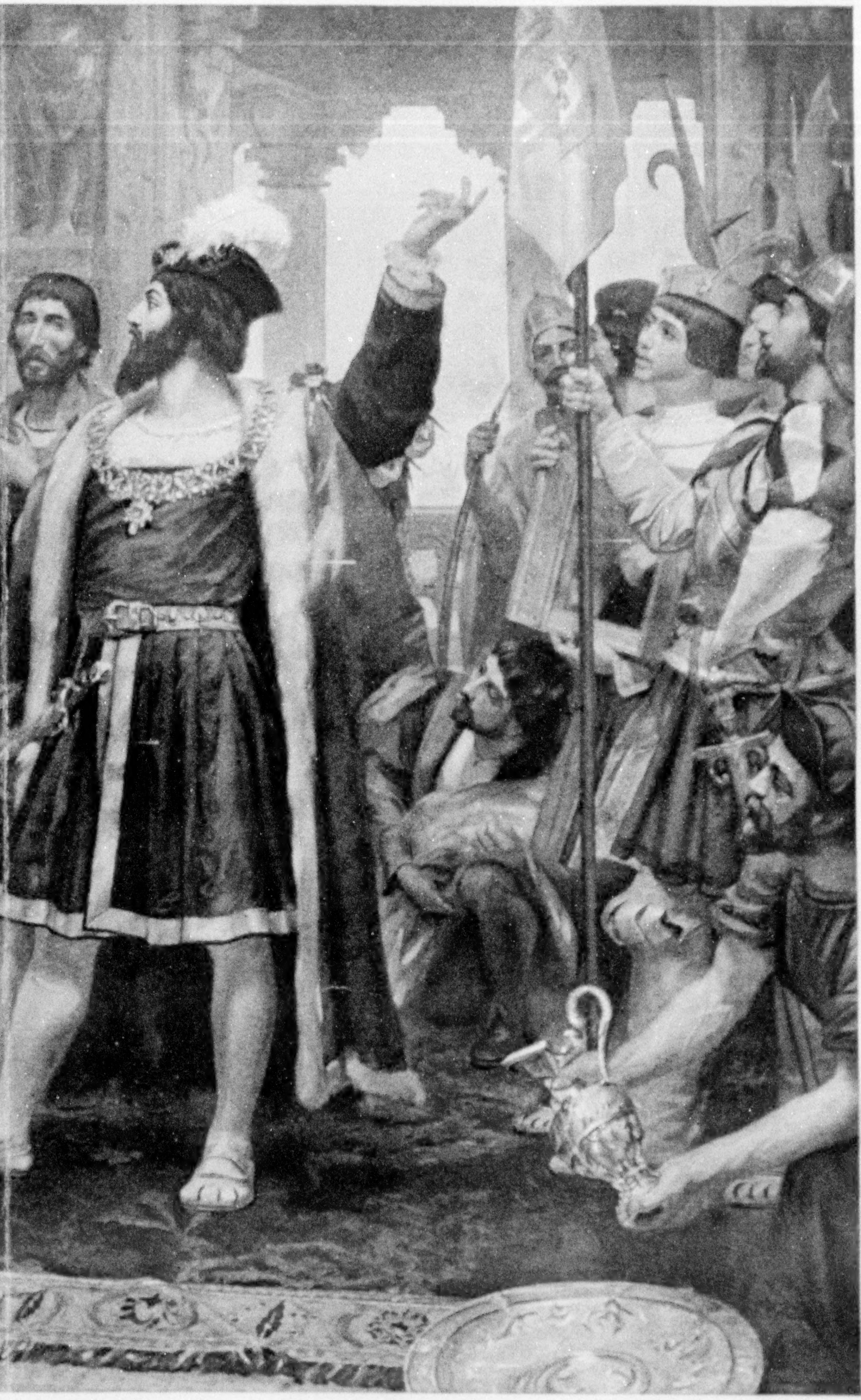




PAINTING BY JOSÉ VELLOSO SALGADO
SOCIEDADE DE GEOGRAPHIA DE LISBOA

VASCO DA GAMA AT THE COURT

Whose Discovery of the Sea Route to India in 1498 Raised His Native Port



T OF THE ZAMORIN OF CALICUT

rtugal to the Peak of Her Wealth and Power Among the Nations of Europe

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SUPPLEMENT

Vol. LII, No. 5 WASHINGTON November, 1927

THE NATIONAL GEOGRAPHIC MAGAZINE

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THE PATHFINDER OF THE EAST

Setting Sail to Find "Christians and Spices," Vasco da Gama Met Amazing Adventures, Founded an Empire, and Changed the History of Western Europe

By J. R. Hildebrand

Author of "The Geography of Games," "The Sources of Washington's Charm," "Man's Progress in Conquering the Air," "The Columbus of the Pacific," etc., in the National Geographic Magazine

COLUMBUS had failed!

True, he found land, but the land did not yield ginger or cloves, nutmegs or cinnamon. Natives with naked, coppery bodies painted in fantastic colors, who were overjoyed with glass beads, hawks' bells, and tinsel trinkets, did not promise a rich overseas market.

"After all, King John was right," murmured the big business men of Lisbon, who had many anxious weeks after their monarch had let the persistent Christopher Columbus slip through his fingers and Spain had sponsored his voyage.

"Now," they sagely surmised, "it is time to resume our explorations on the sane lines laid out by Prince Henry the Navigator."

That great seer, with the garb of a monk and the soul of a sailor, dreaming among his charts and instruments in a bleak, lofty room at Sagres, where the salty winds blew from unknown seas through the paneless windows of intricate Moorish design, had dreamed aright. Overland travelers kept coming in with reports of the fabled Prester John, who had vast resources to help crush Islam, and other reports, not fabulous enough, it later was shown, of the wealth of the Indies.

So the brisk young King Manoel did not wait for importunate explorers to besiege him with proposals. He planned a trade quest along the route that Bartholomew Diaz had blazed, and engaged a likely young man to command the expedition.

Vasco da Gama was his name.

The first Portuguese from Gama's fleet to set foot on the soil of India summed up his king's purpose and unwittingly formulated one of the greatest slogans in maritime history.

"The devil take you! What has brought you here?" exclaimed an Arab.

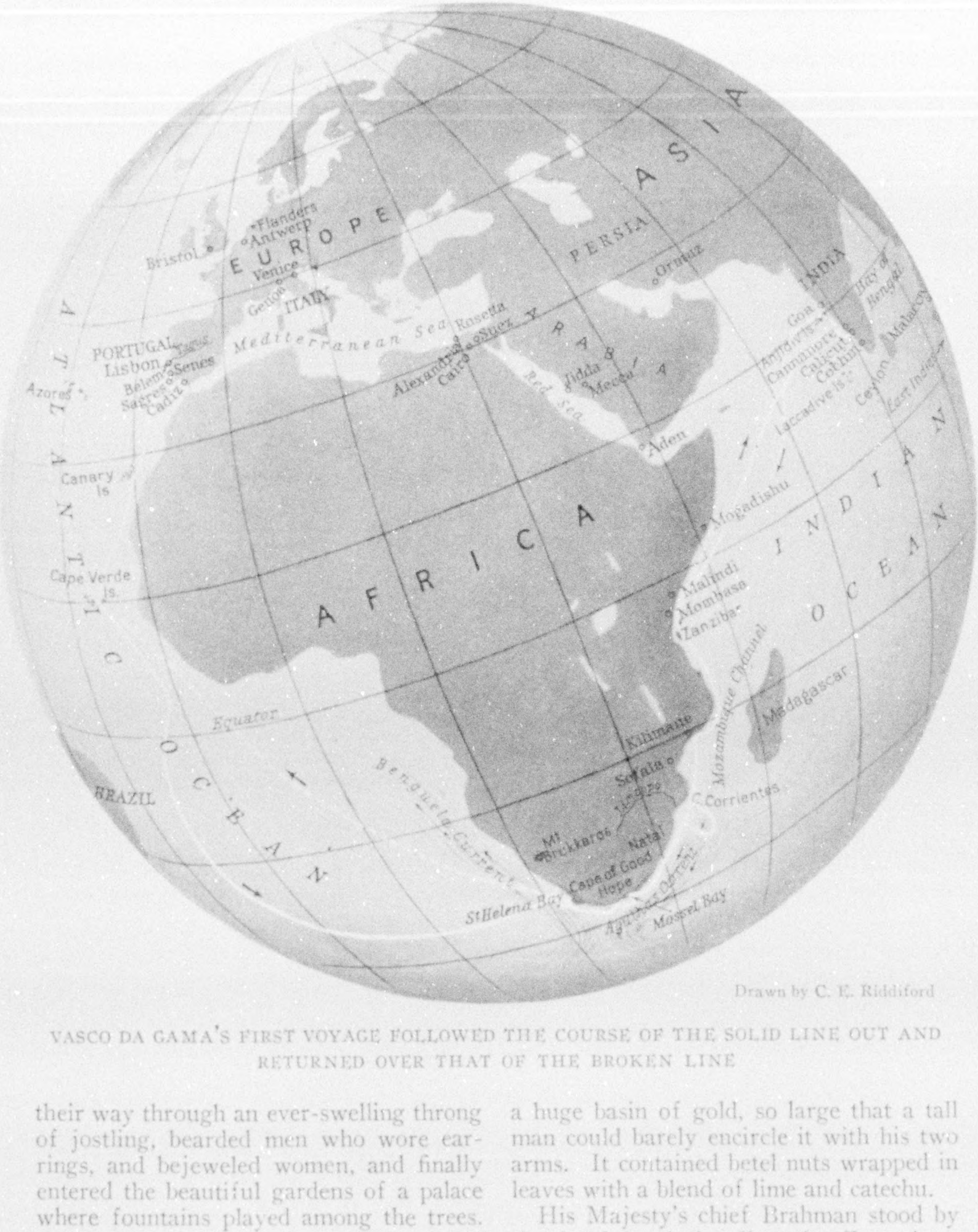
"Christians and spices," retorted the Portuguese.

DAZZLED BY SPLENDORS OF A "SAVAGE" COURT

And Vasco da Gama's reception at the court of the Zamorin of Calicut confirmed the wisdom, to his own generation, of his king. What a contrast to Columbus's meeting with the primitive, ingenuous American Indians!

The Portuguese admiral and thirteen picked men marched into Calicut, elbowed

XUM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Limpopo
C. Corrientes
Mt. Brukkaros
Natal
Cape of Good Hope
St Helena Bay
Agulhas Current
Mossel Bay

Drawn by C. E. Riddiford

VASCO DA GAMA'S FIRST VOYAGE FOLLOWED THE COURSE OF THE SOLID LINE OUT AND RETURNED OVER THAT OF THE BROKEN LINE

their way through an ever-swelling throng of jostling, bearded men who wore earrings, and bejeweled women, and finally entered the beautiful gardens of a palace where fountains played among the trees.

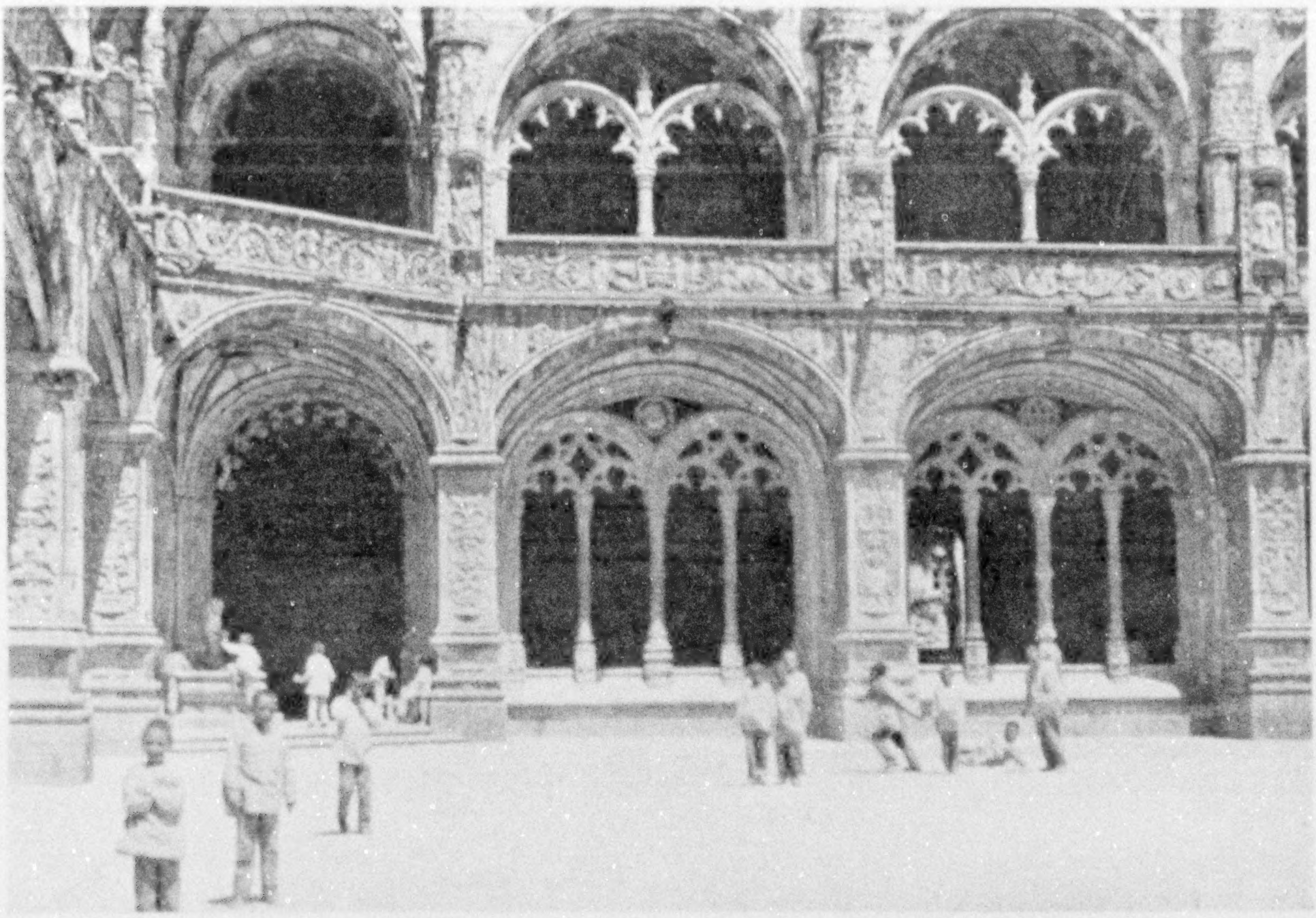
Proceeding through a maze of smaller courts and verandas, they entered an amphitheaterlike audience chamber which dazzled them with its rainbow textiles and scintillant gems.

The Zamorin lounged on a green velvet divan surmounted by a canopy of brocaded gold. At the moment of their entry he was clasping in his left hand a 4-quart spittoon of solid gold. At his right stood a huge basin of gold, so large that a tall man could barely encircle it with his two arms. It contained betel nuts wrapped in leaves with a blend of lime and catechu.

His Majesty's chief Brahman stood by the betel bowl, handing the Zamorin a fresh titbit each time he ejected his previous chew into the regal cuspidor.

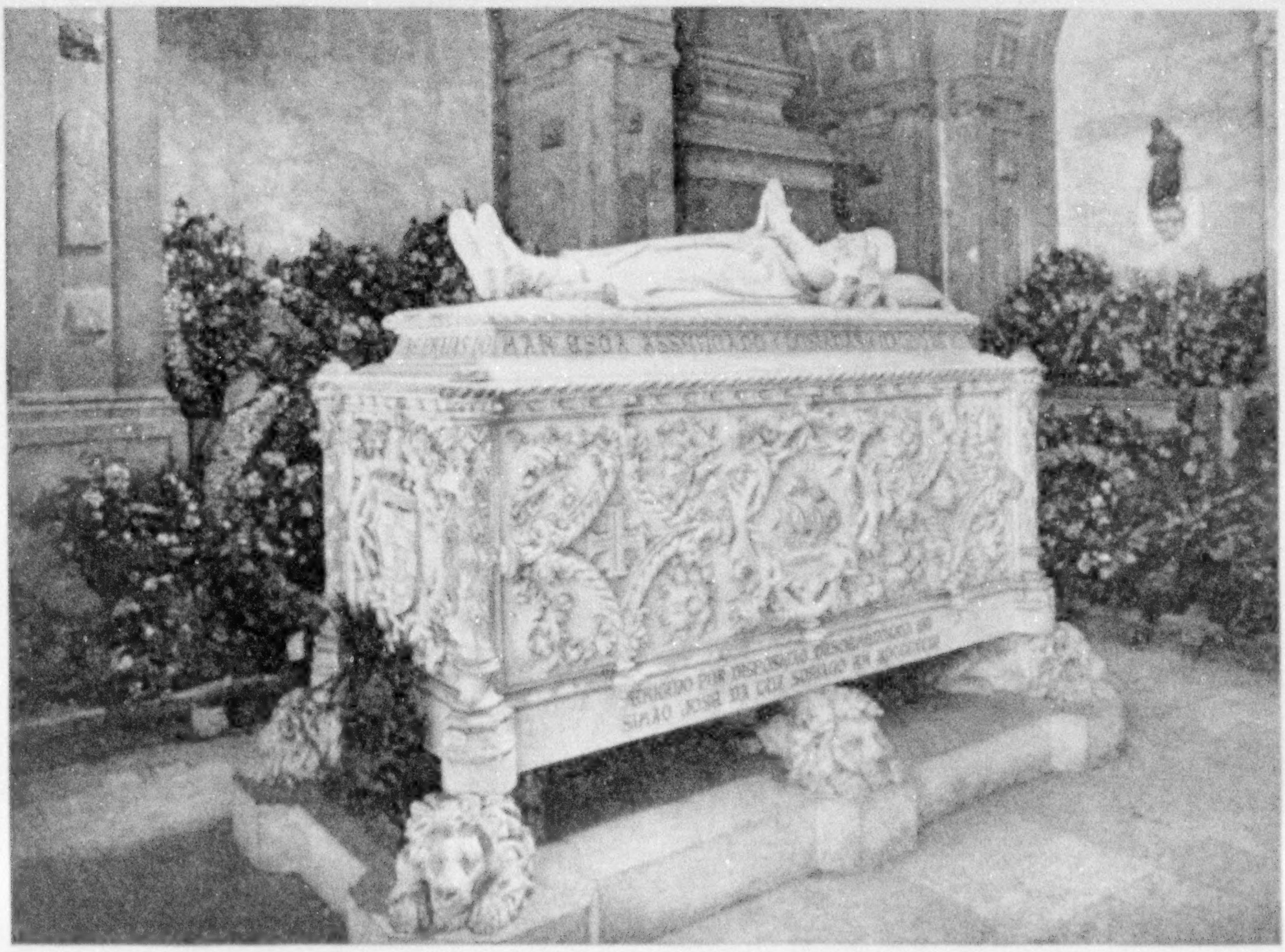
When anyone addressed the throne, the entire company deferentially clapped their hands to their mouths.

The visiting Portuguese had learned the court salute, suggestive of the matutinal radio exercises of a later day. They thrust their hands high above their heads, fists



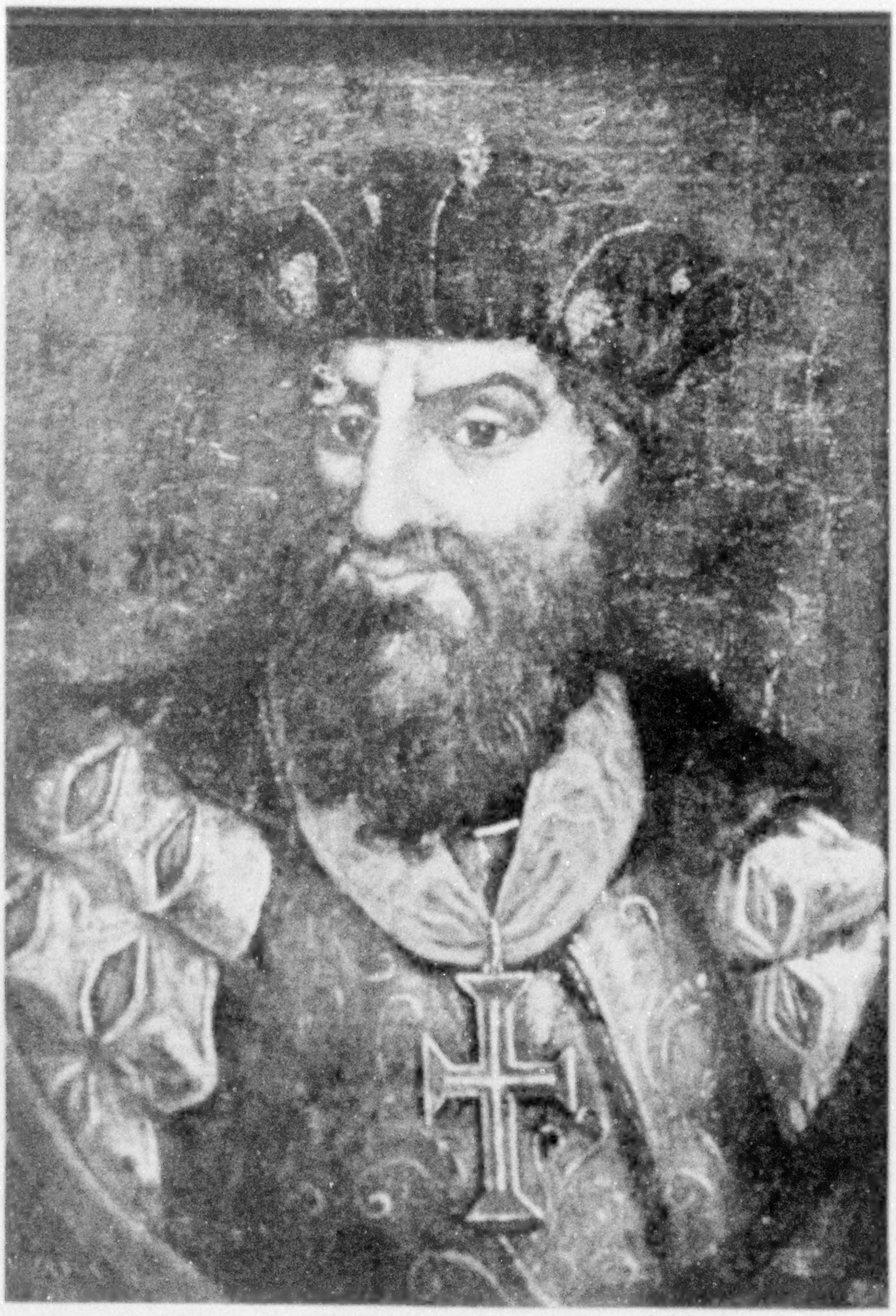
Photograph by Lieut. Clifford Albion Tinker

BOYS AT PLAY IN THE ORPHANAGE OF THE CONVENTO DOS JERONYMOS, AT LISBON



THE PATHFINDER RESTS IN PEACE

His hand on the helm to the last, Vasco da Gama, then an old man, died in line of duty at Cochin, India, on Christmas Eve, 1524. His tomb is in the Convento dos Jeronymos, at Lisbon.



Photograph by Lazarus

VASCO DA GAMA OPENED THE EAST FOR EUROPEAN TRADE

This portrait is considered the most authentic likeness of the great sea captain. A descendant gave the original to the late King Carlos of Portugal, who in turn presented it to the Lisbon Geographical Society.

closed, then—one can almost hear the broadcaster's directions — Open! Close! Hands back to sides!

THE ZAMORIN'S BEADS WERE DIAMONDS AND PEARLS

Silent servants brought water for the thirsty travelers, who had been informed that touching a drinking vessel with the lips was considered unclean. Their efforts to pour it into their mouths resulted either in partial strangulation or in wetting their clothes, and temporarily upset the dignity of their hosts.

Pages passed bananas and melons. But every eye must have been focused on the Zamorin's rather meager person.

He was a small, dark man, swathed in white cloth from his waist to his knees. The material was calico, but finer spun than the linen of Europe. On a hanging corner of this swaddling cloth were handsome gold rings with large ruby settings. On one arm, above the elbow, were three jewel-studded armlets. From the middle ring dangled a diamond as thick as a man's thumb.

"And Columbus did business with glass beads and cheap baubles!" must have been the unspoken thought.

But the eye traveled on. Around his neck hung a string of pearls as big as hazelnuts. It was a double string reaching down to his lap. Then came a shorter necklace, a gleaming gold chain suspending a coruscant cluster of pearls and rubies, and these encircled a monster emerald.

This king had devised places to display his wealth that European monarchs had missed. His long hair was twisted into a cone and bedecked with precious stones and pearls like a display rack in a jeweler's window. From his ears hung not one, but many, pendants of marvelous beauty.

Even the Zamorin's page was garbed in silk; his red shield had a border of jewels; its arm rings were of gold.

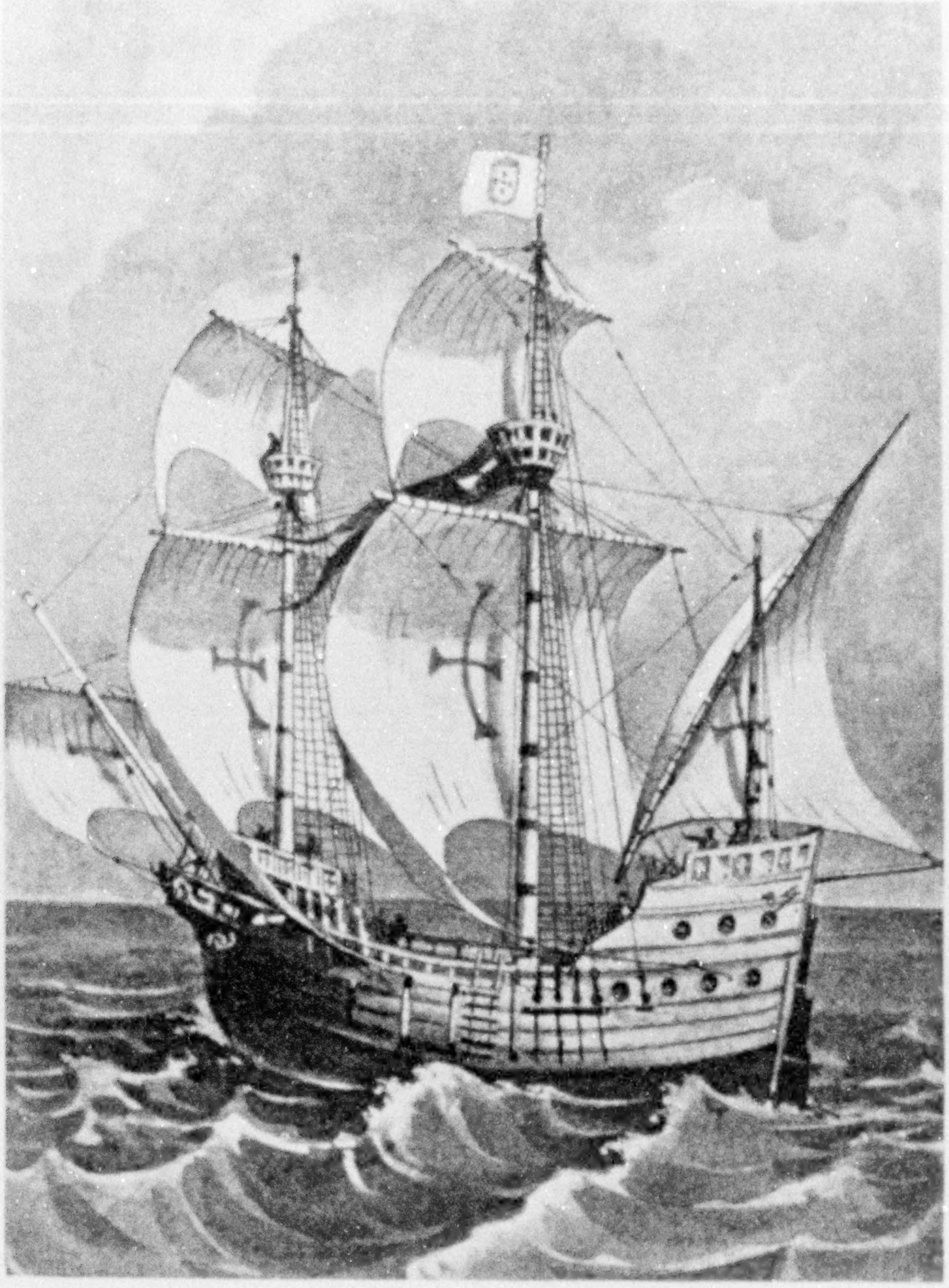
There was no surprise among these "natives" at the coming of Europeans. The shoe was on the other foot. The luxury of the Zamorin's court, Gama soon learned, was no mere barbaric display; it was evidence of the flourishing trade of Calicut with merchants from Persia, Arabia, and Africa's shores. Already these rivals had tried to discredit the newcomer as a pirate adventurer.

The Zamorin rather curtly demanded to know what Gama wanted. The explorer scored over the jealous Arabs when he requested a private hearing.

The Zamorin and the commander retired to a smaller chamber, no less luxurious, and the monarch threw himself on another couch, covered with cloth embroidered in gold.

Thereupon Gama displayed a letter, touched it to his eyes, to his forehead, and, kneeling, handed it to the Zamorin.

It may be that this letter was genuine, though one narrator says it was composed, and King Manoel's signature forged, after Gama anchored at Calicut and learned of the splendors of the Zamorin's court. It also may be that Gama did not fabricate a tale about his ship's having been separated from a vast fleet in a storm, for not all the chronicles mention that.



WITH NO MAPS AND ONLY A CRUDE COMPASS, GAMA TOOK HIS TOY SHIPS AROUND AFRICA TO INDIA

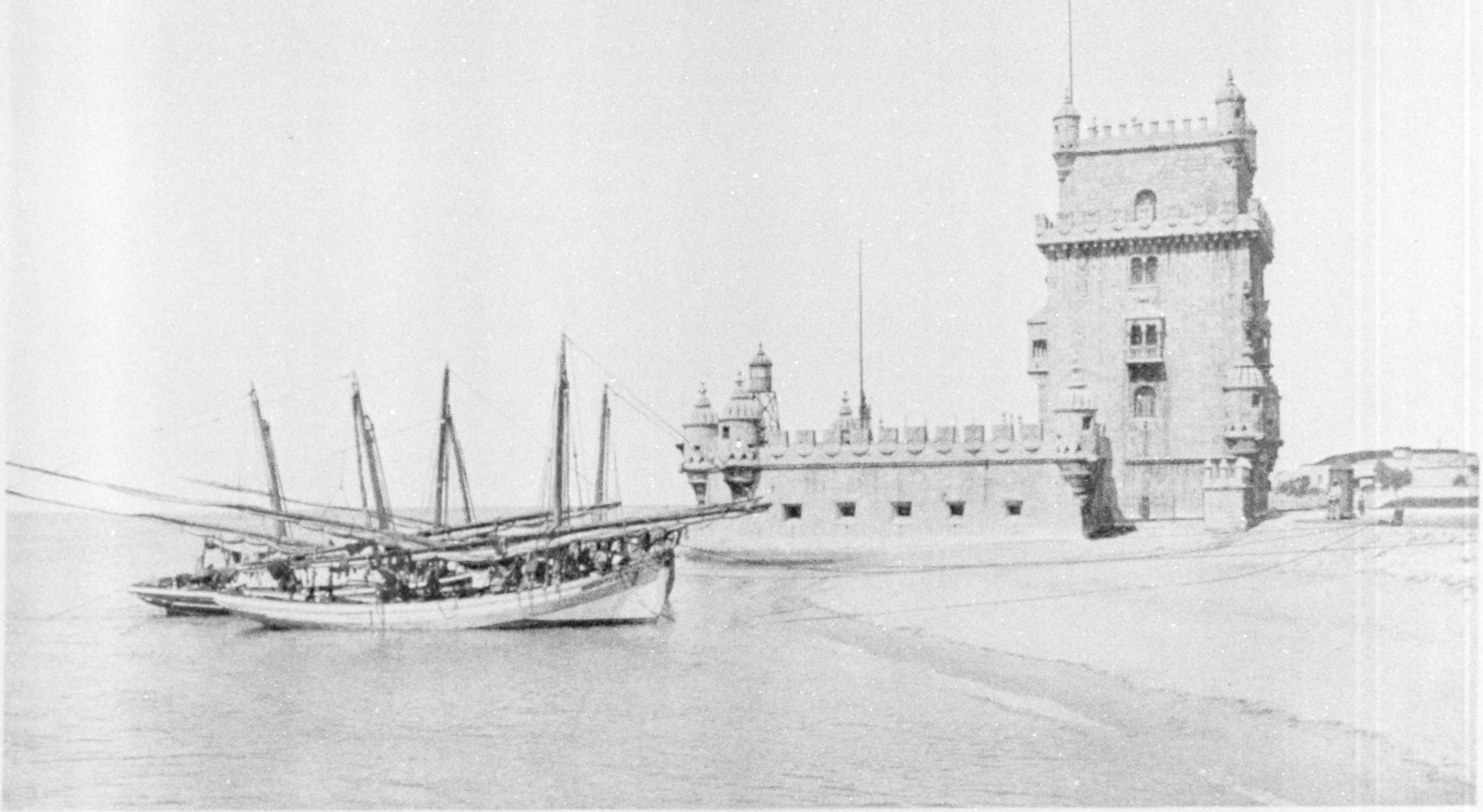
Daring the dangers of unknown seas, smitten by scurvy, risking battle when his small and weakened crew met natives ashore, Gama's 23,800-mile cruise to India and back stands unique in navigation's history. Herbert Johnson's drawing of the *San Gabriel,* after a model designed by Capt. A. A. B. da Silva.

MONARCH SCORNFUL OF GAMA'S GIFTS

But it is certain that Gama had some tall explaining to do when, later, it came to giving the inevitable presents. He assembled the best he had: twelve pieces of striped cloth, four scarlet hoods, six hats, four strings of coral, a case of six washbasins, a case of sugar, two casks of oil and two of honey.

The Zamorin was totally unimpressed. He asked what the Portuguese had expected to find, stones or men? He mentioned that the meanest traders from Mecca did better than that. Finally he intimated that the King of Portugal must be inconsequential, certainly lacking in good manners, to send the mighty Zamorin of Calicut such trifling gifts.

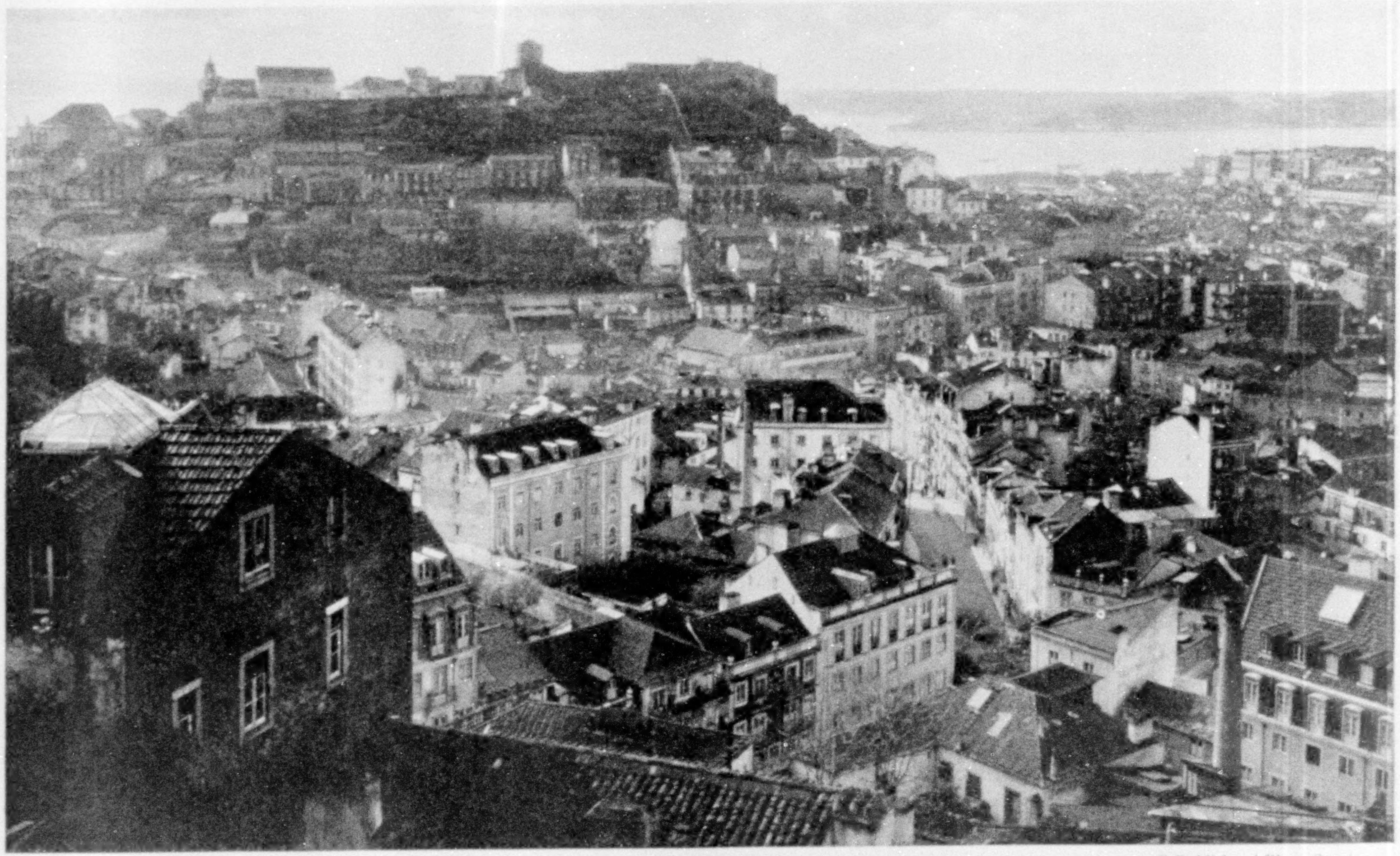
So Gama had to assure him that these presents were from him, not from his king. He had been sent to trade and had brought only samples, not gifts. Or, if you believe another narrative, that the king's gifts were on the mythical storm-lost fleet.



Photograph by Lazarus

WHENCE GAMA SAILED ON THAT GREAT VOYAGE WHICH WAS TO MAKE PORTUGAL RULER OF THE SEAS

Not even the most visionary could have imagined, in 1497, that the launching of Gama's three crude and clumsy sailing ships was to change the whole map of the world and affect the course of human events for generations. The Tower of Belem, on the north bank of the Tagus, at Lisbon. Here Gama spent his last night before embarking on his history-making voyage.



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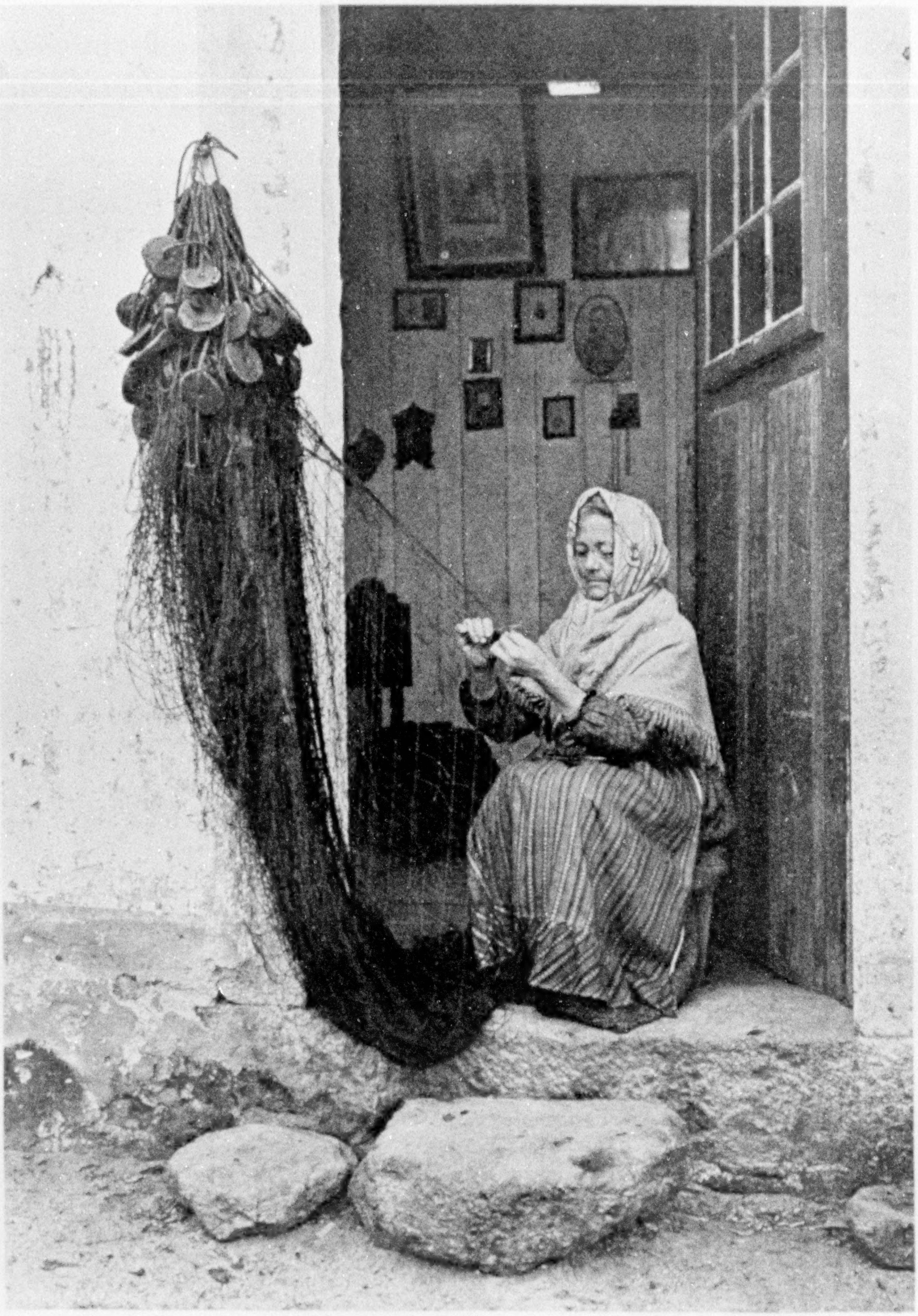
WEALTH CAME TO LISBON WHEN GAMA GAVE PORTUGAL AN EMPIRE IN AFRICA AND INDIA

For 1,500 years Lisbon men have been sailors. From here the Spanish Armada sailed. To a singular degree the sea has shaped the destiny of Lisbon. Sea trade sustains her; at times, tidal waves have nearly destroyed her. Lisbon's very name, one tradition says, came from "Ulyssippo" and the mythical Iberian city founded by Ulysses.



Photograph by A. W. Cutler

KINDRED OF THE SEA

All over the world one finds the "Portygee" sailor and fisherman. For decades fishing boats of Portugal have crossed the Atlantic to the Newfoundland Banks to catch codfish, from which "bacalao," the national dried fish plate, is made. This old woman is mending nets in the Portuguese coast town of Vianna do Castello.

Surely Gama was a great navigator; undoubtedly he was a great explorer; also, in our day, he would be acclaimed a great salesman.

His credentials and gifts were questionable, he was misrepresented and harried by the Arabs, the touch of his hand was a defilement, yet his persuasive presentation of his monarch's power and good intentions won him the Zamorin's signature on the ribbed, if not dotted, line.

HISTORY'S MOST FAMOUS BUSINESS LETTER

For, ultimately, the Zamorin called for his iron pen and wrote with heavy strokes, on a palm leaf, the following note for Gama's delivery to the King of Portugal:

"Vasco da Gama, a gentleman of your household, came to my country, whereat I was pleased. My country is rich in cinnamon, cloves, ginger, pepper, and precious stones. That which I ask you in exchange is gold, silver, corals, and scarlet cloth."

After Gama's return a Venetian chronicler wrote: "When this news reached Venice the whole city felt it greatly and remained stupefied, and the wisest held it as the worst news that had ever arrived." Well they might; from that time forth shipping filtered slowly out of the Mediterranean into the Atlantic.

The Sultan of Egypt, who had fattened on import and export levies upon Suez-routed trade with Venice, was panic-stricken. He ordered Venetian wood shipped to Cairo, camels carried it across the Isthmus, and he started building a futile wooden fleet to attack the Portuguese when they should visit India again.

Probably no other explorer than Vasco da Gama ever reaped so richly and speedily, for himself and his country, the rewards of his discovery. He culminated that amazing flaring up of Portugal from a petty primeval fief of obscure León, in the eleventh century, to the famed mistress of the seas, in the sixteenth.

LANDLUBBERS ABOARD THE CARAVELS

After his second voyage every farm and vineyard was culled of lads to join the India-bound caravels.

In one fleet a ship was manned by sons of the soil who never before felt the need of learning their right hands from their left. At sea they were nonplused by the intricacies of starboard and larboard.

A captain had the happy notion, according to one chronicle, of tying a bundle of garlic over one side of the ship and a handful of onions over the other. Then the pilot would shout to the helmsmen, "Onion your helm!" or "Garlic your helm!"

Portugal's power dwindled in the face of the greater ultimate worth of the voyages of Columbus, Magellan, and Cabot, but that fact detracts not a whit from the glamorous adventures and noble achievements of Gama's first voyage to India.

Were there a list of the seven greatest scenes of the Middle Ages, Gama's setting sail from the mouth of the Tagus July 9, 1497, would rank high among them.

Four squat three-masters rode at anchor in the muddy roadstead. Sailors swarmed over their towering "castles," fore and aft, some storing last-minute supplies of beef and pork, biscuits and wine; others making ready to hoist the huge square sails, each painted with a mammoth cross of the Order of Christ.

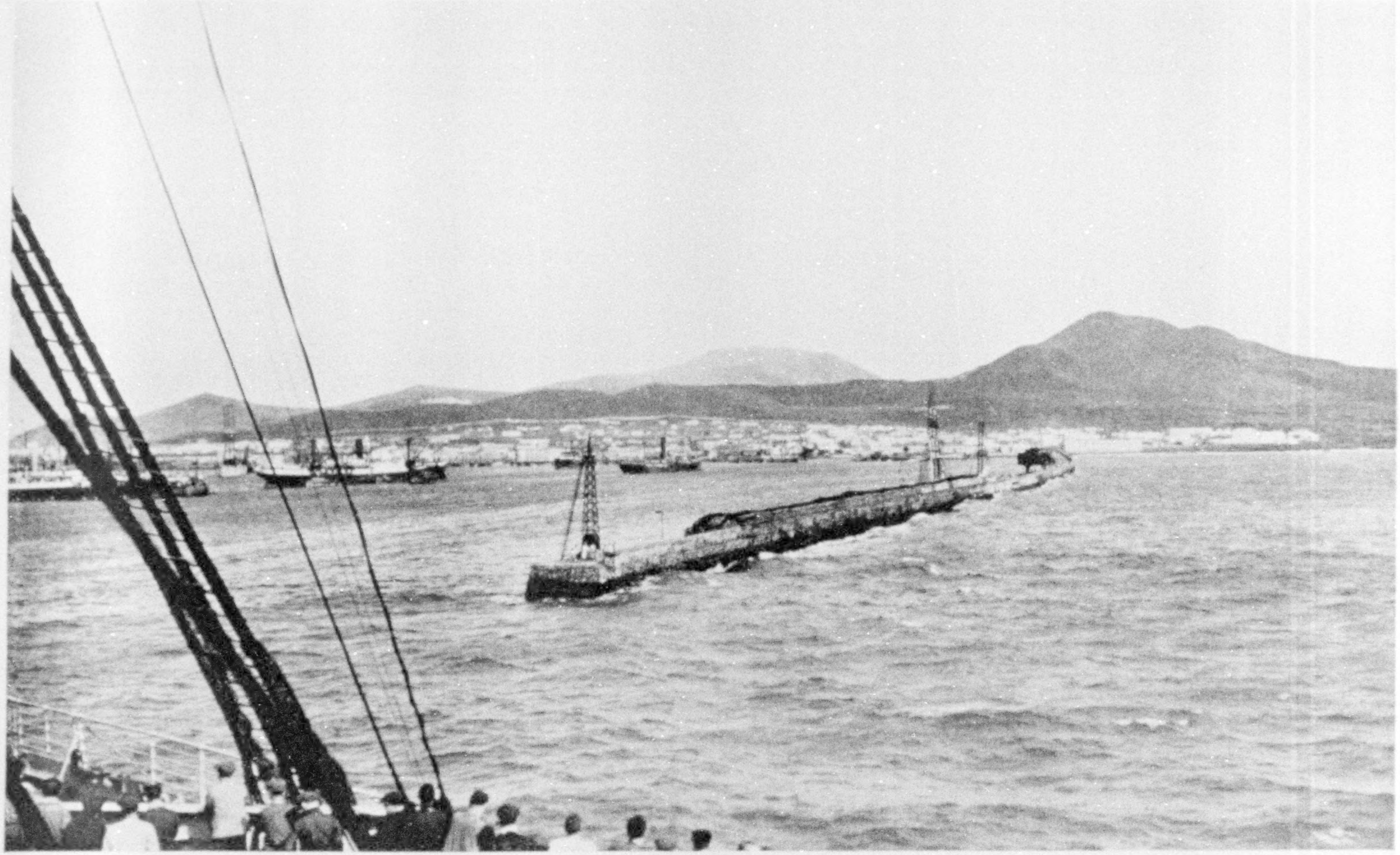
DARED PERILS OF UNKNOWN SEAS

An excited throng, big spice and slave men, shipwrights and sailors, grandees and hangers-on, lined the marshy shores. Some cheered, the women wailed, for the unknown seas held the direst mysteries, even for the boldest seamen. Equatorial oceans boiled and steamed like geysers; the sun beat on parched floors like whirlwinds of flame. Did not the maps show terrifying sea serpents in the deep and monsters on the rocks, unicorns that could pierce three caravels at a single stroke, and the dread Bishop of the Seas clutching his phosphorescent miter?

Twelve surly convicts lounged, under guard, blinking at the unaccustomed light. They had been released from dungeons to reconnoiter lands where Gama did not wish to risk the lives of able seamen.

The crowd parted and, in slow procession, came the expedition's leaders, bearing lighted candles, while priests and friars chanted as they marched behind.

Gama, along with the rest, had spent the night in vigil and prayer in the crude mariners' chapel Prince Henry had built. Always, one must keep in mind, it was

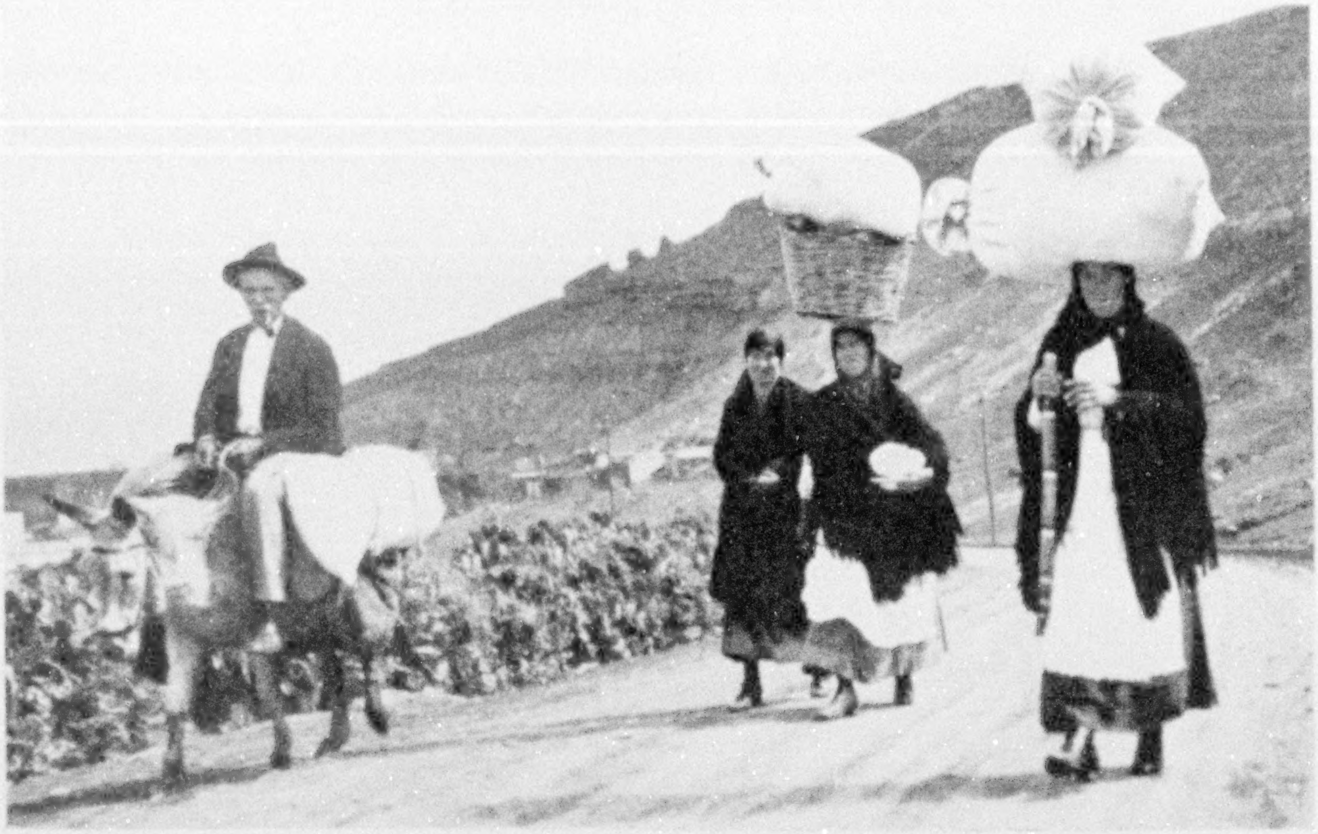


Photograph by Edwin Mills

THE CANARY ISLES WERE REALLY NAMED FOR A DOG, NOT A BIRD: LAS PALMAS, CANARY ISLANDS

Photograph by Topical Press Agency

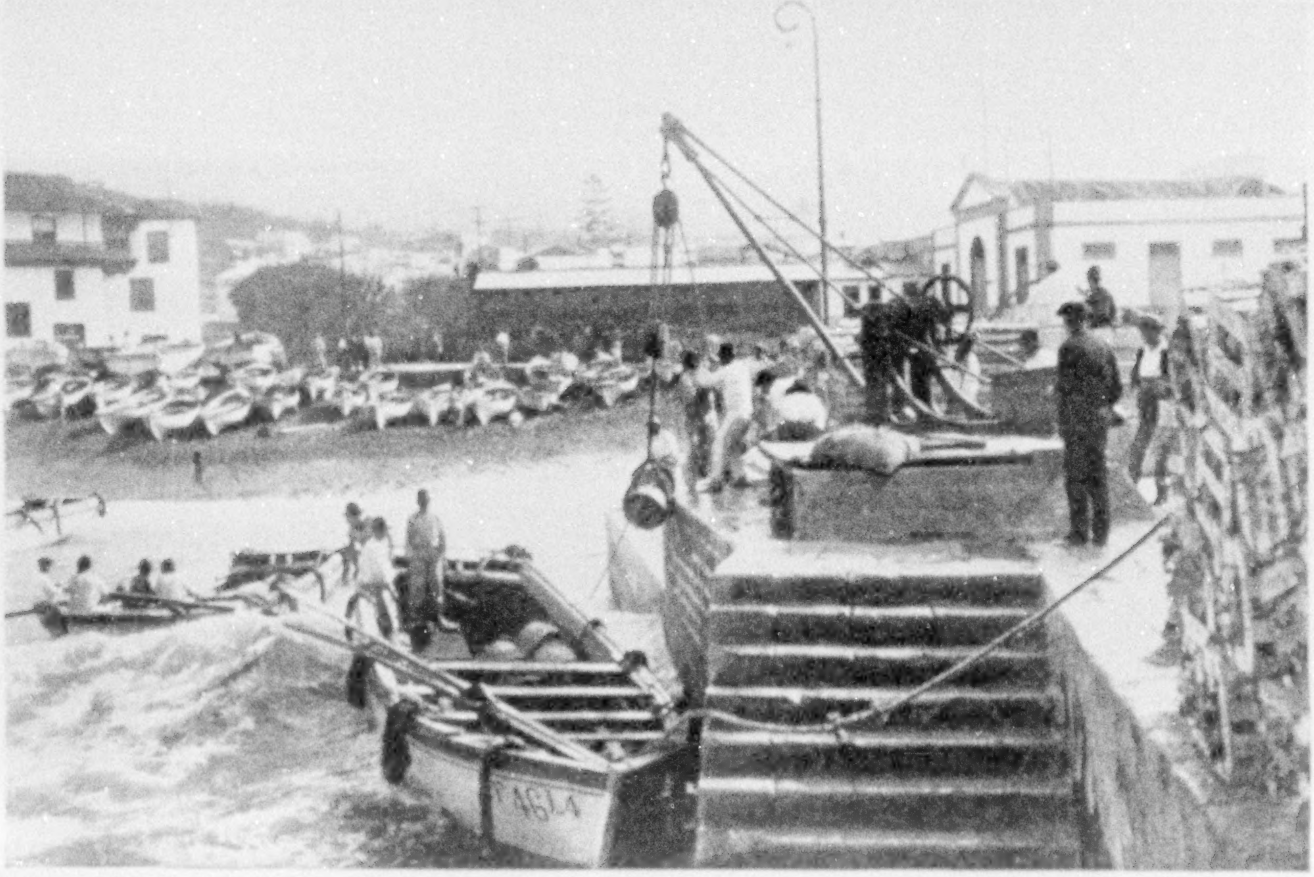
HARD WINDS SOMETIMES BLOW BIRDS AND LOCUSTS FROM AFRICA TO TENERIFFE: OROTAVA, CANARY ISLES



Photograph by Edwin Mills

A CANARY ISLAND TIRED BUSINESS MAN TAKING IT EASY

Before Christ the Romans knew these "Canaria" Islands, which were the real starting point of Columbus when he sailed to discover America. Around Las Palmas womankind generally walk, while the men ride and reflect.



Photograph by Topical Press Agency

TENERIFFE FISHERMEN VENTURE AS FAR AWAY AS THE AFRICAN COAST

Since the days of the Phœnicians the Canary Islands have enjoyed trade by sea. Though but a tiny town, Orotava trades with Europe and America. And farm land here is among the highest priced in the world.

EVERY DAY IS WASH DAY ON THE CAPE VERDE ISLANDS

Long ago Portugal peopled these islands with Guinea blacks, and here African racial influence is still strong. From Africa, also, turtles swim out to the Cape Verdes to lay their eggs. One early chronicler says Gama visited these "distant islands."

"Christians and spices" they sought. Spices were the tangible rewards, but it was the final flicker of the Crusaders' zeal that induced the fervor of the men who went and the people who paid.

A mighty tumult arose when the Royal Standard was run up at the stout mainmast, 110 feet above the deck of the blunt-bowed *S. Gabriel;** another throaty roar greeted the unfurling of the commander's scarlet flag at the crow's nest.

The flagship, *S. Gabriel*, bearing the "captain-major," and its sister ship, *S. Raphael*, commanded by his brother, Paulo da Gama, had been especially built for this voyage by Bartholomew Diaz, who already had rounded the cape which he called "Tempestuous" and his sovereign named "Good Hope."

A smaller, swifter vessel, the *Berrio*, commanded by Nicolau Coelho, was a fine specimen of the lateen-rigged caravels that soon were to carry the flag of Portugal into world ports, from Brazil to farthest Cathay. The fourth vessel carried stores.

All the ships were square-rigged and flat-bottomed and each bore the figure of its patron saint. Their most conspicuous features, the seemingly top-heavy "castles," were designed as citadels, whence their crews might hurl grenades, javelins, and powder pots against boarding pirates or attacking savages.

The men had no firearms, of course, but they were equipped with crossbows, swords, boarding pikes, axes, and spears. A few had steel armor, but most of them relied on breastplates and jerkins.

The captains' quarters were in the quarter-deck castles; officers lodged both fore and aft, while the men slept beneath the low-lying planks between castles.

GAMA A "DARK HORSE" AMONG EXPLORERS

The goldsmiths and the spice merchants and the cloth sellers gossiped furtively about the captain-major as he went aboard—a stocky, florid, austere, black-bearded, bushy-haired young grandee.

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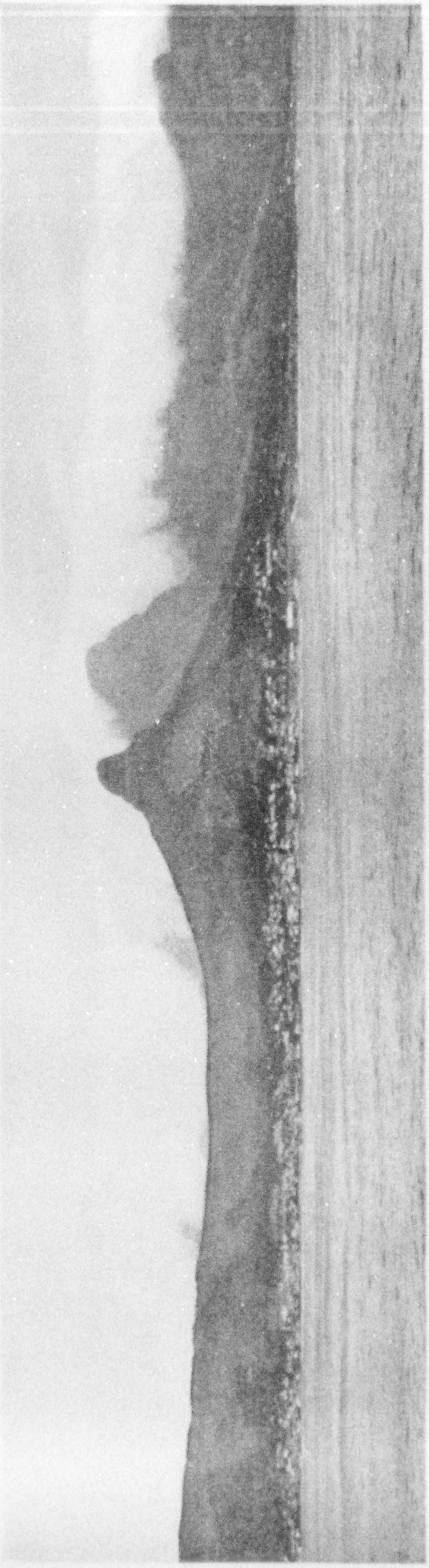
* In full, São Gabriel. São, meaning Saint, is commonly abbreviated in Portuguese to "S.," just as "Saint" is usually written "St." in English, when it precedes a proper noun.



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RUNNING BEFORE A STERN WIND, GAMA ROUNDED CAPE GOOD HOPE NOVEMBER 22, 1497: CAPETOWN, SOUTH AFRICA

"It's taking a chance, building two ships and buying two more, and then intrusting them to a novice," one must have said.

"He's third choice, you know. His father, the chief magistrate of Sines, was picked for the command, and he died. We all thought Paulo would succeed him. Why, even Vasco urged Paulo, and later insisted that Paulo must go along."

"Yes, and it all comes from acting on a hunch," another would have chimed in. "They say the King saw him walking across the courtyard, and liked his looks. Manly bearing, looked like a leader, born to command, and all that. He's only 37. And he's not married. Lucky for us if he gets to India; luckier still if he ever comes back."

The inevitable optimist probably was there with a reminder: "True, he hasn't explored, but he certainly won his spurs fighting the French pirates and the African infidels. And they say he fears neither God nor Devil."

NO LAND FOR 96 DAYS

With stern winds filling the huge sails, the flotilla dropped down the Tagus. It halted at the Canaries and the crew fished. Then it made for the Cape Verdes, and left there August 3 on the longest voyage and one of the most daring recorded up to that time.

The little ships cruised through uncharted seas for 4,500 miles, a voyage of 96 days, without a glimpse of land. Columbus had sailed for 3,500 miles after he left the Canaries, when he sighted the Bahamas.

The commander in chief took a bold course to avoid the doldrums and currents that Diaz and others encountered nearer the African shores. He struck out on an arc to the west which carried him across the Equator at 19° W., and within 600 miles of South America, before he veered back toward the Cape of Good Hope.

To reach his objective after such a cruise, without any landmarks, was a far greater achievement for Vasco da Gama than it seemed to us who take for granted the modern accessories of navigation.

Previous mariners preferred the perils of coastal cruising to the uncertainties of the open ocean, because they could go ashore frequently to correct inevitable errors of their crude instruments.

Gama had the best aids his time afforded. There was the wooden astrolabe, designed in Prince Henry's time, clumsy makeshift for the sextant, with which to find the latitude. Determination of longitude was yet unsolved. He probably based his calculations on the variations of the compass needle, because it was assumed that lines radiating from the magnetic pole had a constant relation to those radiating from the geographic pole. Thus if two places showed an equal divergence of the compass they must be on the same meridian.

On board also were "Genoese needles," or mariners' compasses, sounding leads, hourglasses, and a rope was flung astern to indicate the ship's leeway. There was no log to measure a day's run, nor any chronometer. The ship's progress was estimated by various modes of dead reckoning. One way, in a calm sea, was to spit over the bow and to calculate the rate by timing its speed in passing this comparatively fixed point.

For a time the armada beat against adverse trade winds and rode out furious storms. Then the sails picked up west winds that bore the ships swiftly toward the South African shores. Late in October they espied sea fowl, next a whale was sighted, and then seals and "sea wolves," probably porpoises. More hopeful still, they came upon a weed peculiar to South Africa's coast, and on November 7 they found shelter, which their commander named St. Helena Bay.

SIGHT A HOTTENTOT GATHERING HONEY

On shore they saw a lone Hottentot gathering honey among the bushes. They fed him and sent him to summon his fellow tribesmen. The crew rejoiced more at the homelike sound of barking dogs and the sight of familiar birds, such as cormorants, sea gulls, crested larks, and turtledoves.

Other Hottentots came down from their kraal. They wore shells and copper in their ears, fanned themselves with foxtails tied to sticks, and carried fish-spearing shafts tipped with gemsbok horns.

The Portuguese displayed gold, seed pearls, cloves, and cinnamon, which did not tempt them, but they were captivated by tiny bells and tin rings.

To-day Hottentots, living like those that Gama found, dwell farther north in a reservation at Mount Brukkaros, Southwest Africa, site of the National Geographic Society's station for observation of solar radiation.*

The voyagers set sail again on a Thursday, November 16, heading for the Cape, and on Saturday they sighted it. But they tacked against a merciless head wind until the following Wednesday before they doubled it. Then, in a few days more, they put in at Mossel Bay.

OXEN USED AS TAXICABS

More Hottentots welcomed them, with a band—not brass, but squeaky wood winds, or *goras*, "some producing high notes and others low ones, thus making a pretty harmony for negroes, who are not expected to be musicians!" Then they danced and, in return, the visiting sailors put on an exhibition dance aboard their boats, to the tune of the ships' trumpets, and even the austere Gama joined in the dancing.

The Portuguese gave away red caps and bells and received ivory bracelets, evidence that elephants were plentiful. They bought an ox and found it "fat and toothsome." Oxen, geldings and hornless, provided the local taxi service, for the natives made saddles of twigs and rode them to avoid walking even short distances.

In the bay the voyagers observed Seal Island, which retains its name but not its seals.

The *Roteiro* tells of seals, some "as big as bears, with large tusks. And whilst the big ones roar like lions, the little ones cry like goats. There are birds as big as ducks, but they cannot fly, because they have no feathers on their wings. They bray like asses." We can only surmise that the Portuguese saw some Cape penguins.†

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* See, also, "Hunting an Observatory: A Successful Search for a Dry Mountain on Which to Establish the National Geographic Society's Solar Radiation Station," by C. G. Abbot, in the NATIONAL GEOGRAPHIC MAGAZINE for October, 1926.

† It is a great loss to the annals of exploration that Vasco da Gama left no first-hand narrative of his voyages, such as the journals of Columbus and Cook. The colorful Correa and the

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GAMA BARTERED CHEAP RED CAPS FOR IVORY

Around this beautiful Cape Point Drive, Capetown, Union of South Africa, lies the great bay where Gama and his men, armed with crossbows, went ashore and traded with the negroes. These natives played flutes, "thus making a pretty harmony for negroes, who are not expected to be musicians." Before leaving, Gama bought an ox for meat, paying for it with three bracelets.

The three ships resumed their voyage, passing the "farthest north" achieved by Diaz after he had rounded the Cape, and here it seemed as if the jealous sea rallied to a last desperate stand against the intruders.

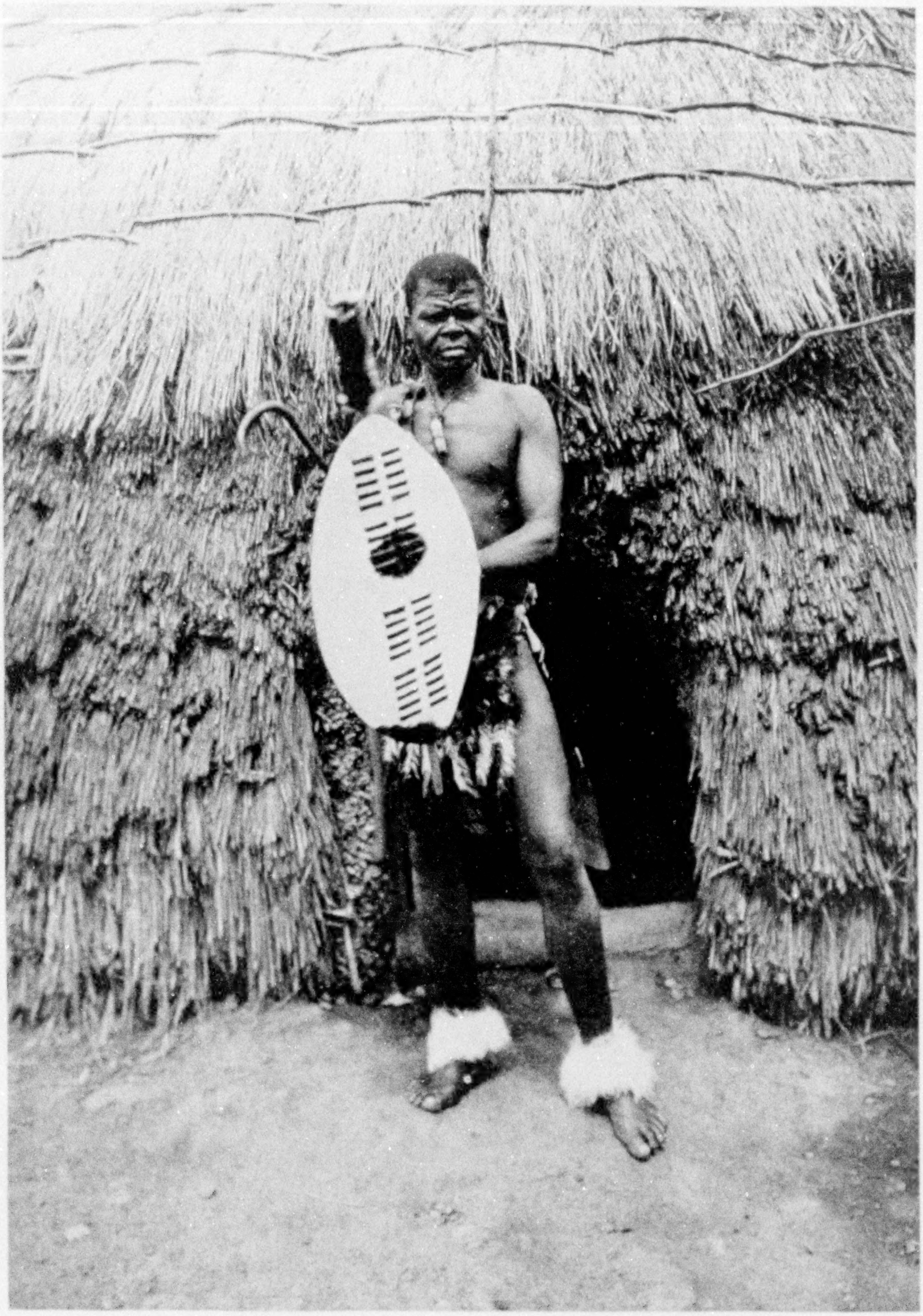
A sudden storm arose. Soon it seemed as black as night. Small sails and lower sails were struck, shrouds were lashed to the yards to make the masts more secure, and the foresails alone remained.

The winds whipped the little boats with fiercer fury. Lightning dimmed the lamps hung out so they might keep together.

anonymous *Roteiro* (Journal or Itinerary) are the sources of last resort of Gama's travels.

Gaspar Correa did not arrive in India until 15 years after Gama first landed. He found the notes of the first expedition compiled by a priest, one of those conservators of medieval history, and from this source and others less reliable he evolved a gossipy record that a Pepys might have written, but not a Macaulay. One version we now possess was salvaged from a Lisbon confectioner's shop, fortunately before many leaves had been used to wrap up sweetmeats.

The *Roteiro* is more authentic, but as distressingly laconic at times as the first chapter of Genesis. And then again one must guess at the meaning of some of the curious notes, such as those, for example, on the aforementioned Seal Island.



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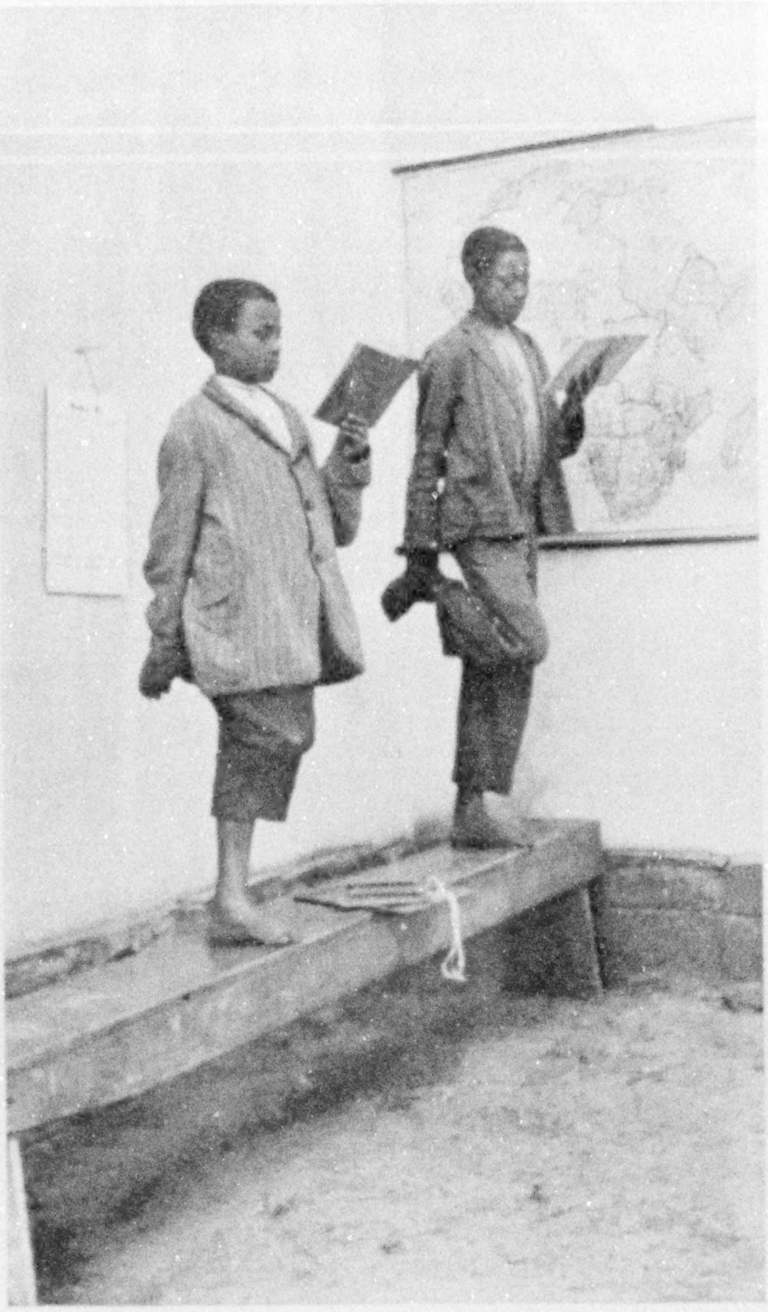
SOUTH AFRICAN BLACKS, THOUGH UNFRIENDLY, TRADED FRESH MEAT FOR THE RED PANTS AND CAPS OF GAMA: A ZULU CHIEF, DURBAN, NATAL



Photograph from Otto Haeckel

ONE WAY TO KEEP SCHOOLBOYS AWAKE

Standing in this storklike manner is the punishment sometimes meted out to boys in Southeast Africa guilty of nodding over their books or similar youthful sins.

Thunder crashed above the shrieking winds, the lashing waves, and the creaking timbers. Gama's master and pilot urged that he turn south, the better to ride out the storm.

Gama shouted back that he had vowed when he crossed the bar at Lisbon never to turn about a single span's breadth, and threatened to toss the next man overboard who suggested such a course.

Each wave beat the little ships until it seemed the next one must shatter them. They lurched so that men lashed themselves to keep from being tossed from port to starboard. They began to take in water from both sides and below, so the sailors had to work the pumps at highest speed.

"The seas rose toward the sky and fell back in heavy showers that flooded the ships," says the picturesque Correa. "They could not see each other, except when they were upheaved, when they seemed to be among the clouds."

GAMA DEFIES THE STORM AND CREW

The men pleaded with the captains; aboard the *S. Gabriel* Gama cajoled, threatened, worked at every job, and cowed his men by "a fury that outdid the storm."

Hour upon hour of this and the men began to sicken. Some died of exhaustion. Gama said a hundred might die and he would go down with his ships rather than turn back.

In all three ships the seamen clamored and wailed, they prayed and cursed, and invoked the most bloodcurdling imprecations upon Gama, in the name of God, the Devil, their wives and their children.

Then a lull in the storm, and mutiny—though there is only Correa's word for that.

Gama assembled the plotting masters and pilots aboard the *S. Gabriel*—a difficult feat, it would seem, in a still heavy sea—told them to go below and sign a document which would prove to his King that further progress was impossible.

Having trapped them, so Correa says, he clapped them in irons, threw their navigating instruments overboard, and said God alone would guide him to India's shores.

WHERE NATAL GOT ITS NAME

When the storm abated there still was the Agulhas Current, one of those giant and then uncharted ocean rivers which plagued early mariners, and the ships found themselves at one time 200 miles abaft their dead reckoning.

The *S. Gabriel* had sprung its mainmast and lost an anchor, the daily water ration was cut down to less than a pint, and food had to be cooked in brine.

It was Christmas Day before they limped along the shores they named Natal. The indomitable Gama veered seaward to elude the current, but they could not escape its clutches; so they anchored near the mouth of a river which we now know as the Limpopo.

Crowds of friendly Bantus, among whom women seemed to outnumber the men by two to one, thronged the beach. Gama gave their chief a jacket, red pantaloons, a cap and a bracelet. That dignitary donned them at once and strutted around the village, crying, "Look what has been given me!" He must have resembled the liveried doorman of a modern American hotel.

The observant Portuguese concluded that copper and tin were plentiful. Everyone wore circlets of the former metal on his arms and legs and twisted in his hair, while tin was used on the hilts of the daggers, which were carried in ivory sheaths.

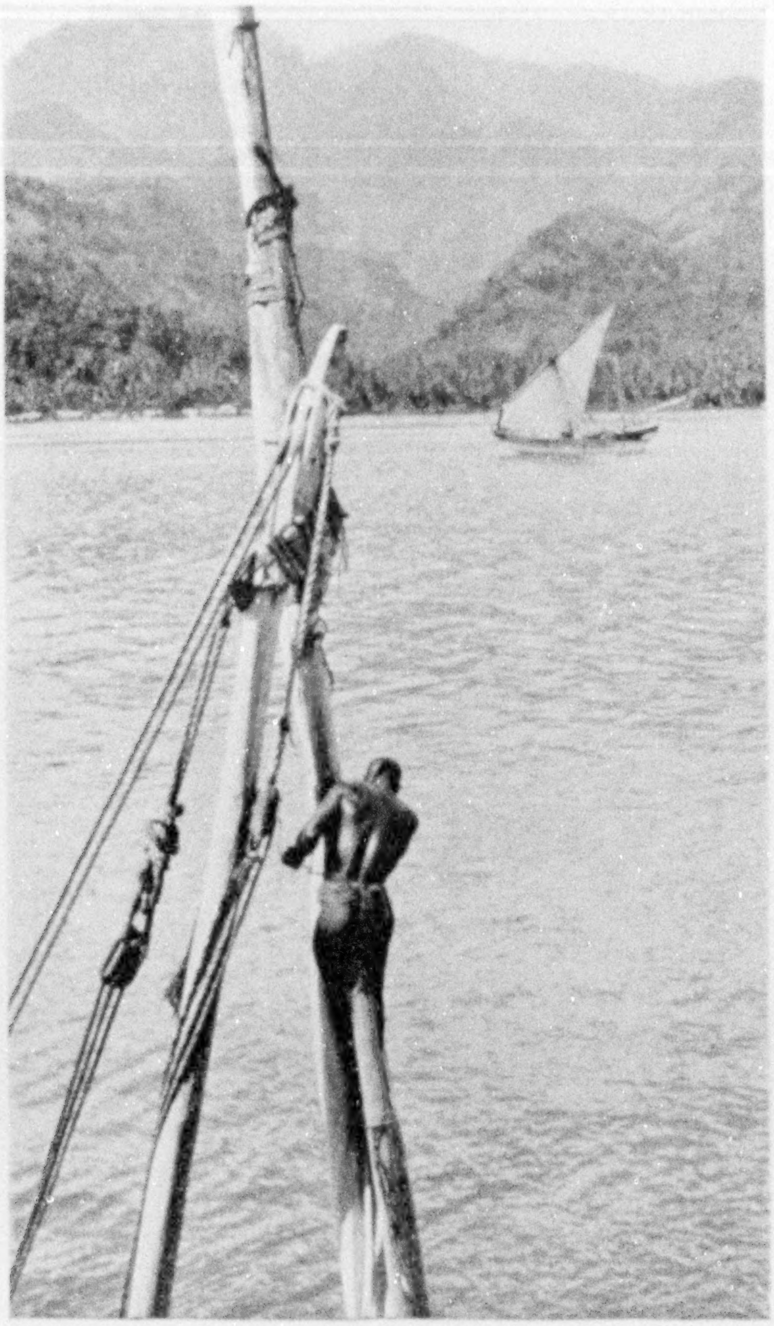
Again Gama pressed northward, passing the Cape of Currents (Corrientes)—it was now January, 1498—and reversed the experience of most explorers. Henceforth the unknown world he was entering grew progressively more civilized. The reason is an interesting study in geography.

The landsman easily recognizes mountains as barriers to migrations, and he observes civilization creeping along the courses of friendly rivers. The oceans also have their barriers and their traveled valleys.

Trade winds and tides that pour through the sluicegates formed by the East Indies create Indian Ocean currents that "sweep round from east to west in an immense coil," between the Bay of Bengal and the Arabian Sea.

The periphery of this giant swirl crashes against the northern shores of Madagascar and funnels a warm current southward through the Mozambique Channel, which collides with the cold Antarctic Current.

The Arab traders who had nosed southward along the African coast encountered in the resulting storms off Cape Corrientes a barrier no less sinister than our Rocky Mountains seemed to pioneers of the covered-wagon era.



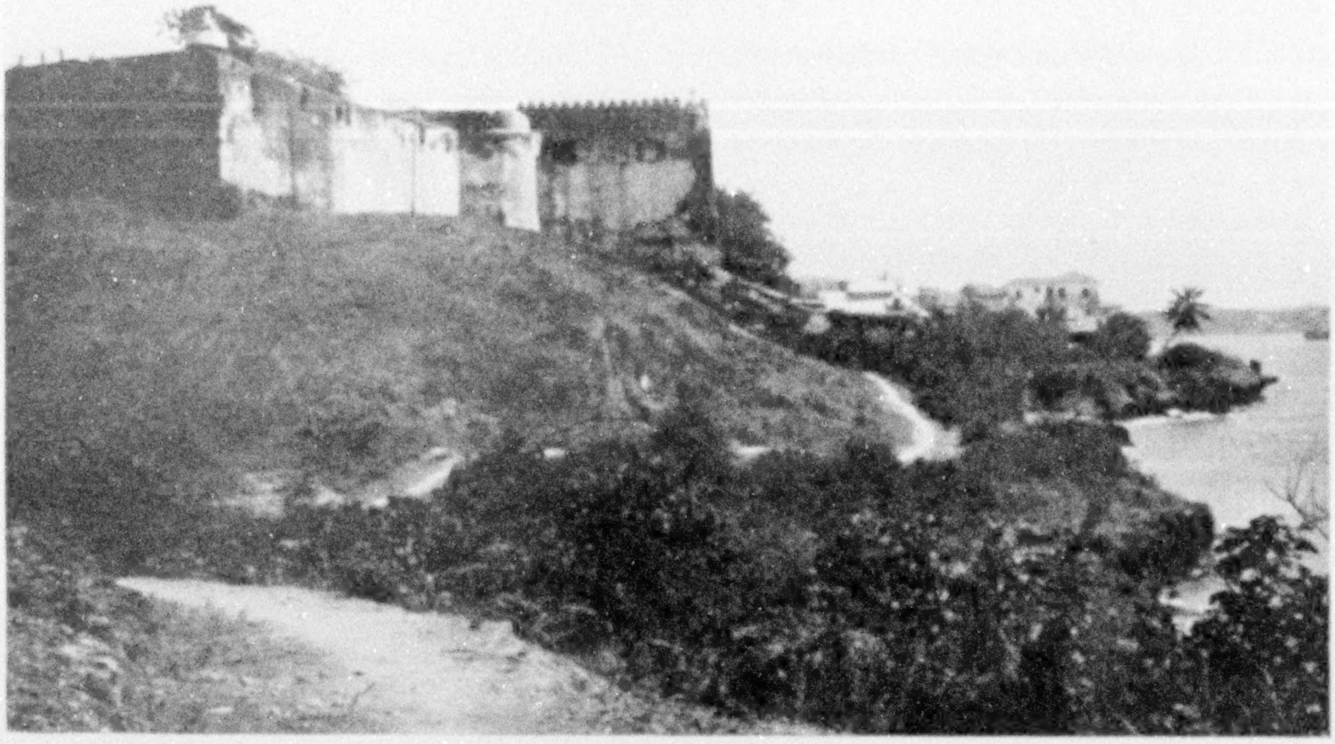
Photograph by Citroën Central African Expedition

A COMORO ISLAND SAILOR GOES ALOFT

The Portuguese, sailing in quest of India, found Arabs settled on the four volcanic Comoro Islands in Mozambique Channel. Now the group, exporting sugar and vanilla, belongs to France.

HAREMS ESTABLISHED TO BREED TRADE AGENTS

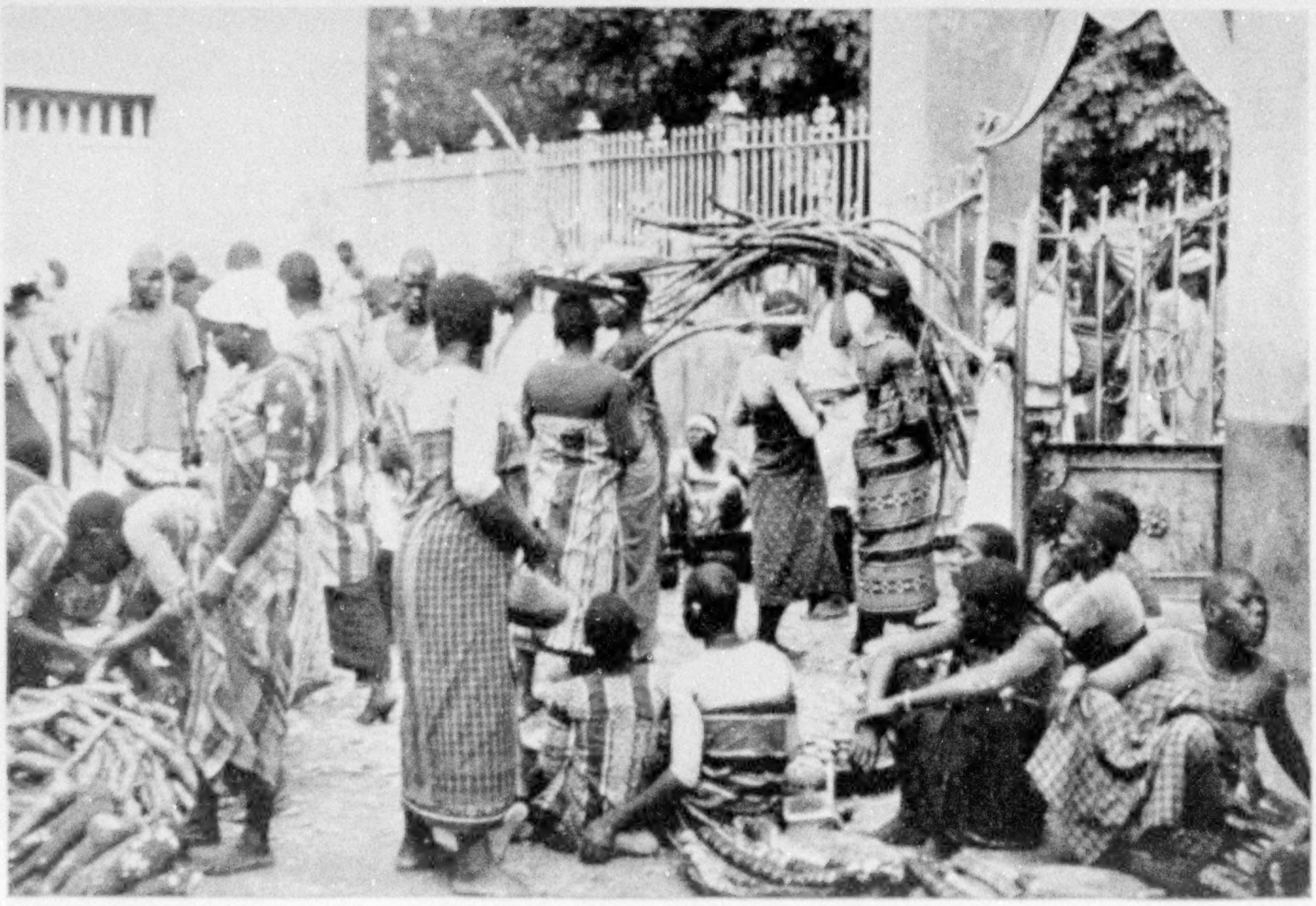
To the north both Persians and Arabians set up trading posts that sometimes grew into cities, trafficked in gold and ivory, and established harems to breed half-castes who would act as their local bargainers and buyers.



Photograph by Dr. Vittorio Sella

THE PORTUGUESE BROUGHT HOMELAND STONE TO BUILD THEIR AFRICAN FORTS

Here, at Mombasa, Roosevelt landed to begin his African hunt in 1909. The Swahili name for Mombasa aptly means "war." Time and again, since the Perso-Arab settlement in the 11th century, first a Moslem, then a Christian, flag has flown here. Calicut Banyans and Oriental Christians lived here when Vasco da Gama came.



Photograph by Edgar S. Aldrich

IN MANY WORLD MARKETS SUGAR-CANE STALKS SERVE AS "CANDY"

The name Mozambique, first given a town on a coral isle in Mossoril Bay, now extends to all of Portuguese East Africa. It was discovered by Vasco da Gama in 1498, and later a fort was built here with walls 70 feet high, all of stone brought from Portugal. This native market is in the town of Mozambique.

These Mohammedans made the Arabian Sea a Mediterranean of southern Asia, and their clumsy, roped-plank dhows, with palm-matting sails, plied busily among the prosperous ports of Persia, Arabia, and India. Gama was heading directly into their traffic lanes.

His first encounter with this new world of the East was at Kilimane. Naked black men brought supplies and water to the ships, but when the Portuguese went ashore they met with "two gentlemen . . . very haughty," who looked with disdain on presents offered them. One wore a fringed headgear of embroidered silk; another had a cap of green satin.

With these "gentlemen" was a younger man who, it was learned, had come from some distant land and already had seen ships like Gama's.

In this friendly port the sailors were attacked by scurvy, deadly enemy of maritime explorers until Captain James Cook solved the problem of its prevention.*

Barros, known as the Portuguese Livy, describes the affliction vividly, if not pleasantly: "So great (was the) growth of the flesh of their gums, that it would hardly be contained in the men's mouths, and as it grew it rotted, and they cut into it like into dead flesh; a very pitiable thing to see."

Paulo da Gama ministered to the sick day and night, emptying his private medicine chest to treat the sufferers.

Many were still sick when they made their next port, Mozambique, but there they were overjoyed by evidences of the riches ahead.

First there were the Mohammedan merchants, attired in "fine linen or cotton stuffs, with variously colored stripes and of rich and elaborate workmanships. They all wear toucas (caps) with borders of silk embroidered in gold."

Even more impressive were four Arab vessels lying in the harbor, vessels "laden with gold, silver, cloves, pepper, ginger, and silver rings, as also with quantities of pearls, jewels, and rubies."

At Mozambique Gama engaged two pilots and took aboard four half-castes; but when he arrived at Mombasa the pilots, having learned that their employers were "dogs of Christians," tried to escape.

The King of Mombasa sent the explorer a sheep, oranges and lemons, sugar cane, and a ring, and when Gama dispatched emissaries ashore they were escorted through four doors, each guarded by a stalwart negro with a drawn cutlass, safely to the presence of the ruler.

After their reception they were shown around the village, where they met two merchants whom they took for Christians because of pictures they displayed, which appeared to represent the Holy Ghost. The sketches probably portrayed the Hindu pigeon god and goddess.

Two days later Gama's suspicious were aroused by the maneuvers of a boatload of "Moors." "Moors," incidentally, was the designation used in all the chronicles for all nonnatives, both in Africa and India. They were Moslems, mostly from Arabia, many of them were of mixed blood, and the Swahili language of East Africa to-day possesses a large admixture of Arabic.

A MILD FORM OF THE "THIRD DEGREE"

Gama suspected the half-castes he held captive could shed light on their purpose, so he "questioned" two of them "by dropping boiling oil upon their skin, so that they might confess any treachery intended against us."

About midnight the ship's watch saw what seemed to be a school of tunny fish; soon they realized the "fish" were armed swimmers trying to cut the ship's cables. When the *Berrio's* watch sounded an alarm they silently swam away.

"Those and other wicked tricks were practiced upon us by these dogs," the *Roteiro* relates, "but our Lord did not allow them to succeed, because they were unbelievers."

All the while at Mombasa the Portuguese were regaling themselves with "large sweet oranges, the best that had ever been seen," and when they sailed away to Malindi all trace of scurvy had disappeared. Various records mention both facts, but do not connect them.

In eager pursuit of the riches ahead, the explorers sailed on. From captain to cabin boy, they forgot the scourges of scurvy and storms. Gama had been de-

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* See, also, "The Columbus of the Pacific," by J. R. Hildebrand, in the NATIONAL GEOGRAPHIC MAGAZINE for January, 1927.

Photograph by F. J. Koch

AFRICAN FRUIT SAVED GAMA'S CREW FROM DYING OF SCURVY

In the market place of Zanzibar, like a native "stock exchange," one sees Arab, Banyan, Senegalese, and half-caste traders, each fighting for his share of the huge East African seaboard commerce that passes this way. These are the fruit dealers of Zanzibar.

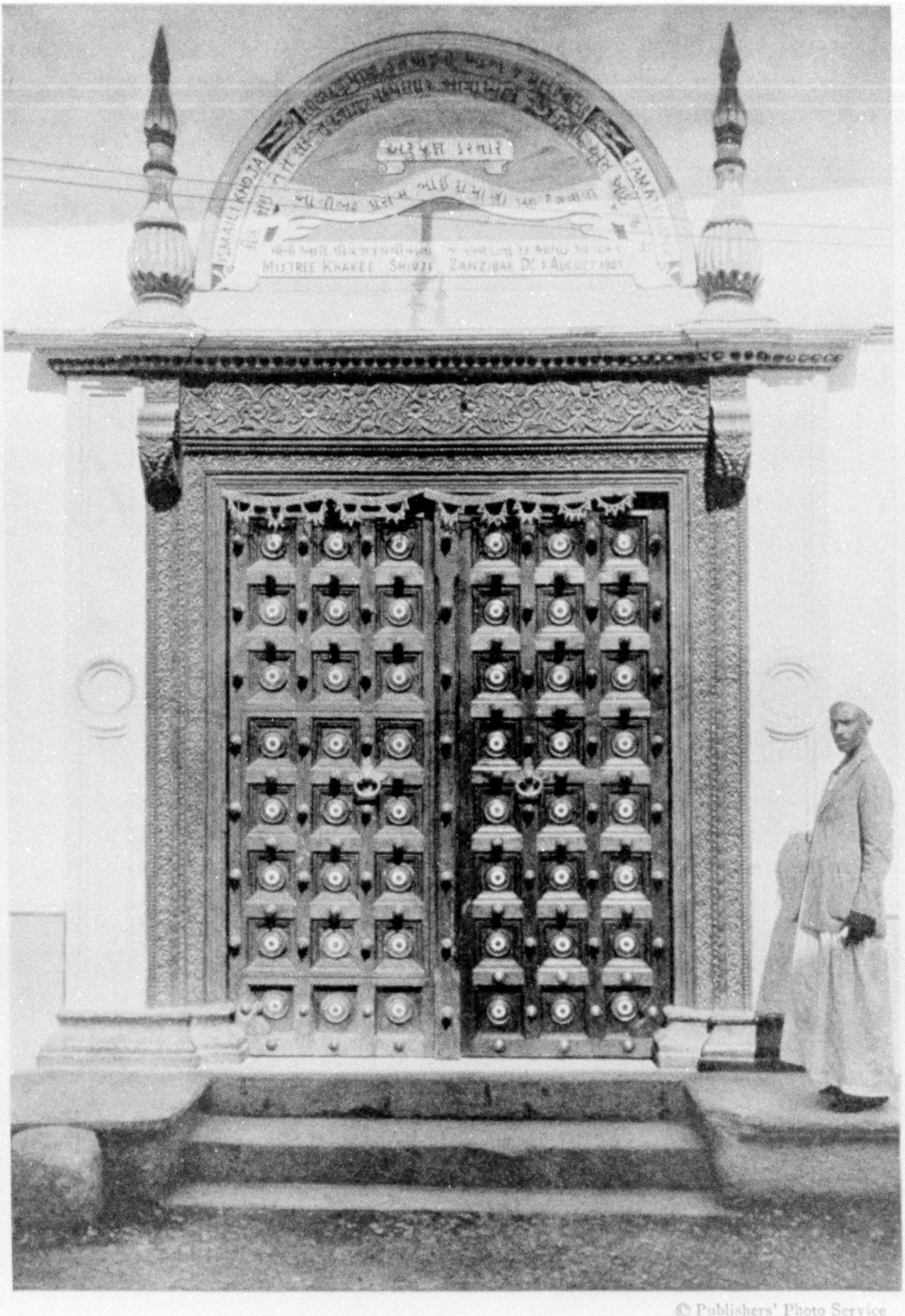
nounced as a demon; now he was a demigod. Let Castile have all the red Indians of the New World, Lusitania was heir to luxury that Crœsus would have envied!

Gama experienced the prevailing exaltation. Already the Indian Ocean, from Zanzibar to Hindubar, was his. He met two *sambuks* (a sort of coastal barge) and one escaped, but when he was in hailing distance of the other he grandiloquently proclaimed to the perplexed Moslems that the *S. Gabriel's* flag was the emblem of the King of Portugal and ordered them to strike sail in the name of Manoel, else he would burn ships and men and send them all to the bottom. Moreover, he would do the same for every ship that dared disobey him.

Probably the very names of Portugal and Manoel were news to the sambuk's distracted captain. There was plenty more ivory where he got his cargo, and his crew could swim to the near-by shore, but he had aboard his beautiful young wife, who was clutching her chest of jewels and comforting four weeping women in her service. So her husband surrendered.

Gama sent ten Portuguese aboard and on the eve of Easter Sunday the fleet and its prize anchored off Malindi.

Next morning a dazzling tropical sun gleamed on a wide semicircle of tall,


ISMAILI KHOJA
JAMAT
MISTREE KHAKEE SHIVJI ZANZIBAR

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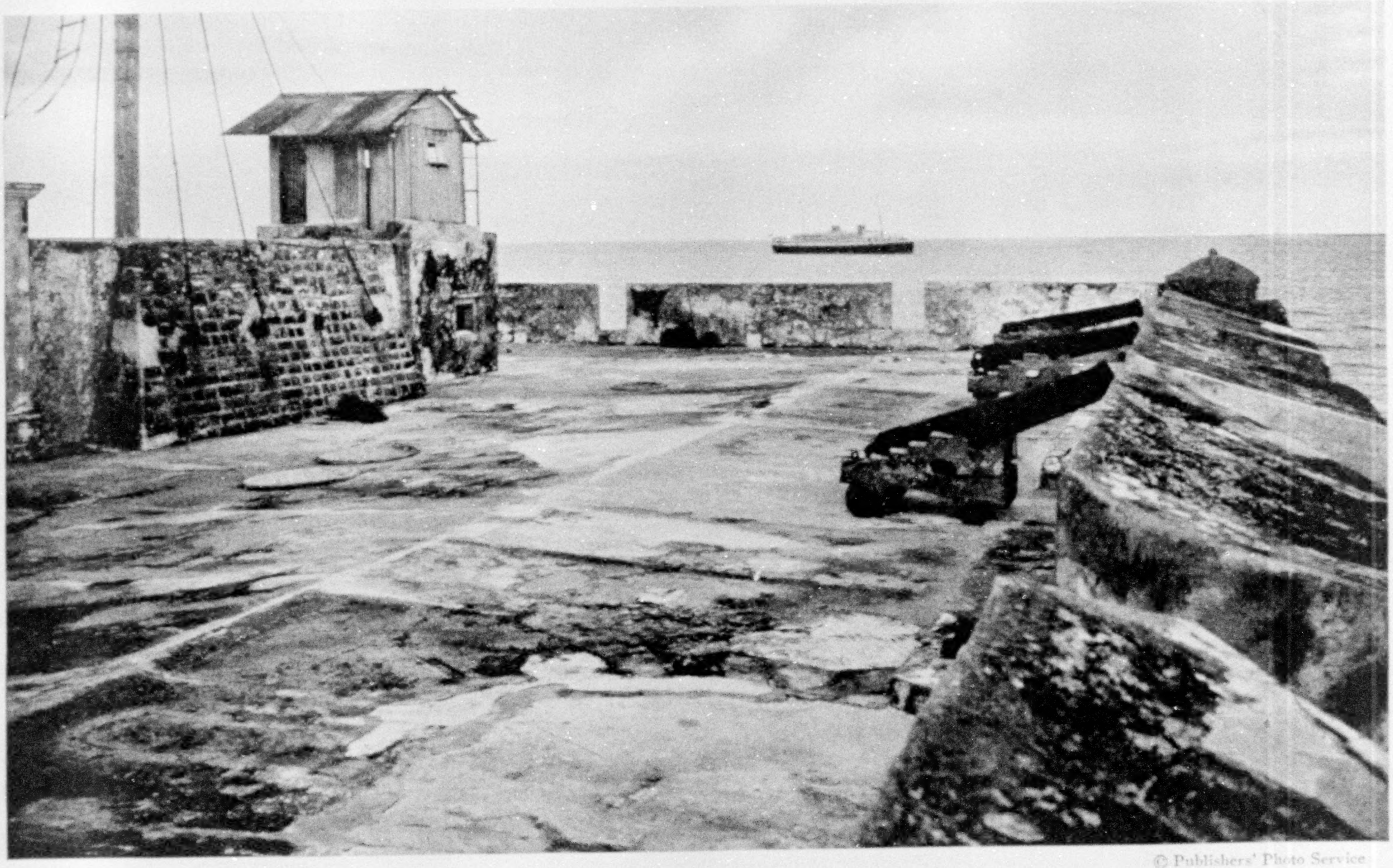
AN ORNATE MOSQUE ENTRANCE SUGGESTIVE OF A MODERN BANK VAULT

The spikes on this Mozambique mosque door were originally put there to save it from injury by passing elephants that sought to scratch themselves against it. Zanzibar has been described as Oriental in appearance, Moslem in religion, and Arabian in morals.



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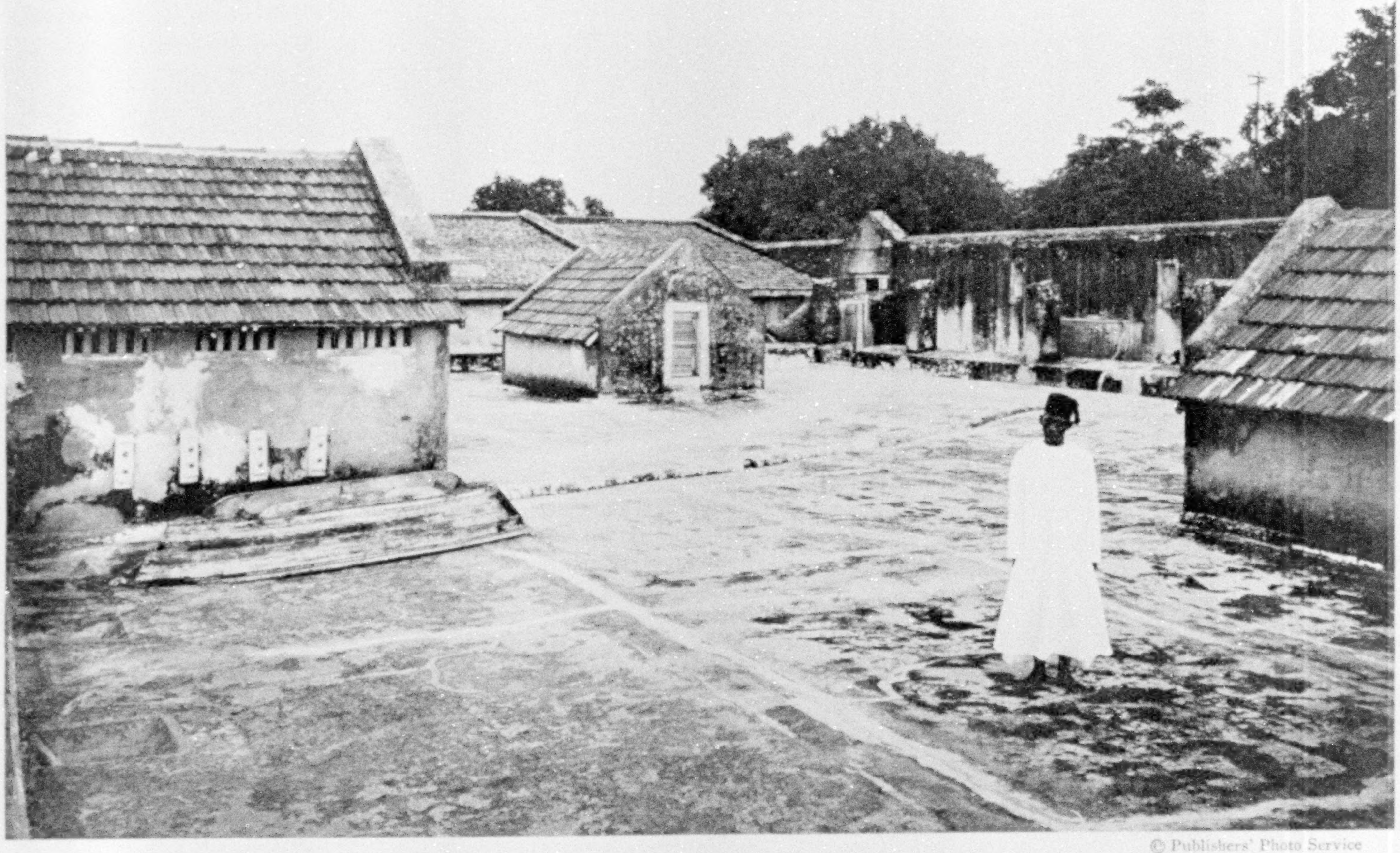
AN ARAB TOWN STOOD HERE WHEN GAMA CAME IN 1498: PORTUGUESE FORT, MOZAMBIQUE, EAST AFRICA

In Mozambique one sees 16th-century barred windows and bolted doors, and occasionally an original mica window, placed before glass was obtainable. This land of man-eating lions and the world's most pestiferous ants helps provide dainty Miss America with ivory for her fans and music for her dancing. It is the home of the xylophone, or "native piano."



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MOZAMBIQUE ISLAND, WITHOUT WELLS, SPRINGS, OR STREAMS, MUST CATCH ITS WATER FROM THE SKIES

Under this masonry platform is a great tank, which holds the water supply of the town of Mozambique. As may be seen, the platform slopes toward its center, so that when the torrential rains fall the water is caught and drained into the cistern. This system of waterworks was built by the Portuguese in 1508.

Photograph by William Lancaster Jenkins

TRADITION SAYS VASCO DA GAMA BUILT THIS MONUMENT WHEN HE LANDED HERE IN 1498: MALINDI, EAST AFRICA

whitewashed houses, rimming a beautiful bay, and in the background were more restful greens of coconut groves, fields of maize, and well-kept gardens.

MALINDI FIRST MECCA FOR WEARY MARINERS

Flags flew from the city's walls, in obvious welcome, and pennants arose in friendly greeting among the numerous ships of the harbor.

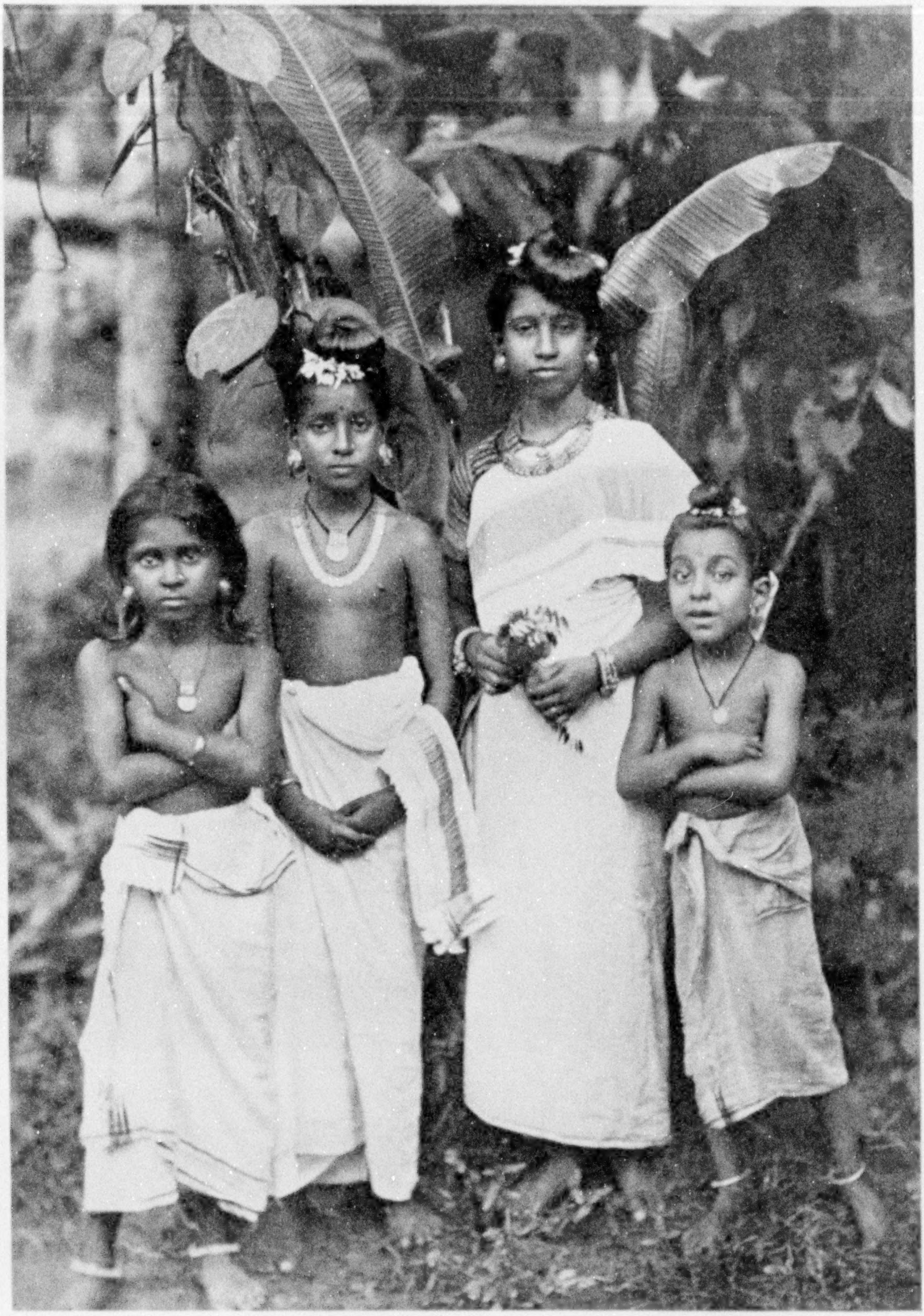
"At the sight of it our men experienced great delight and gave great praise to the Lord, who had brought them to such a country," exclaimed the pious Correa.

Malindi was not India, but it was Gama's last port of call before Calicut, and it was to become a key colony of Portugal's Indian Ocean domain. There, if ever, Gama displayed the courtesy and adroit tact of a statesman and a diplomat.

Scarcely had the elated Portuguese time for a daylight survey of the scene when a canoe came alongside "with a well-dressed man," who asked their needs and said his king had ordered their every wish fulfilled.

This seemed too good to be true; so the commander sent a red-robed Moor ashore to reconnoiter. Back came the Moor with a boatload of presents and the Rajah's high priest, whom Gama received with ceremony, ordering that preserves be brought him in a silver vase, and also water with a napkin. The latter touch was the ultimate mark of deep courtesy to a guest.

Soon a curious, flat craft was seen circling the ships. On it the visitors descried the king wearing royal robes of damask trimmed with green satin. He was seated on two bronze chairs beneath a sunshade of crimson satin. The royal band was aboard, playing *sivas,* hornlike instruments of ivory, copper, and wood, with a mouthpiece in the middle. They were as long as a man is tall and beautifully



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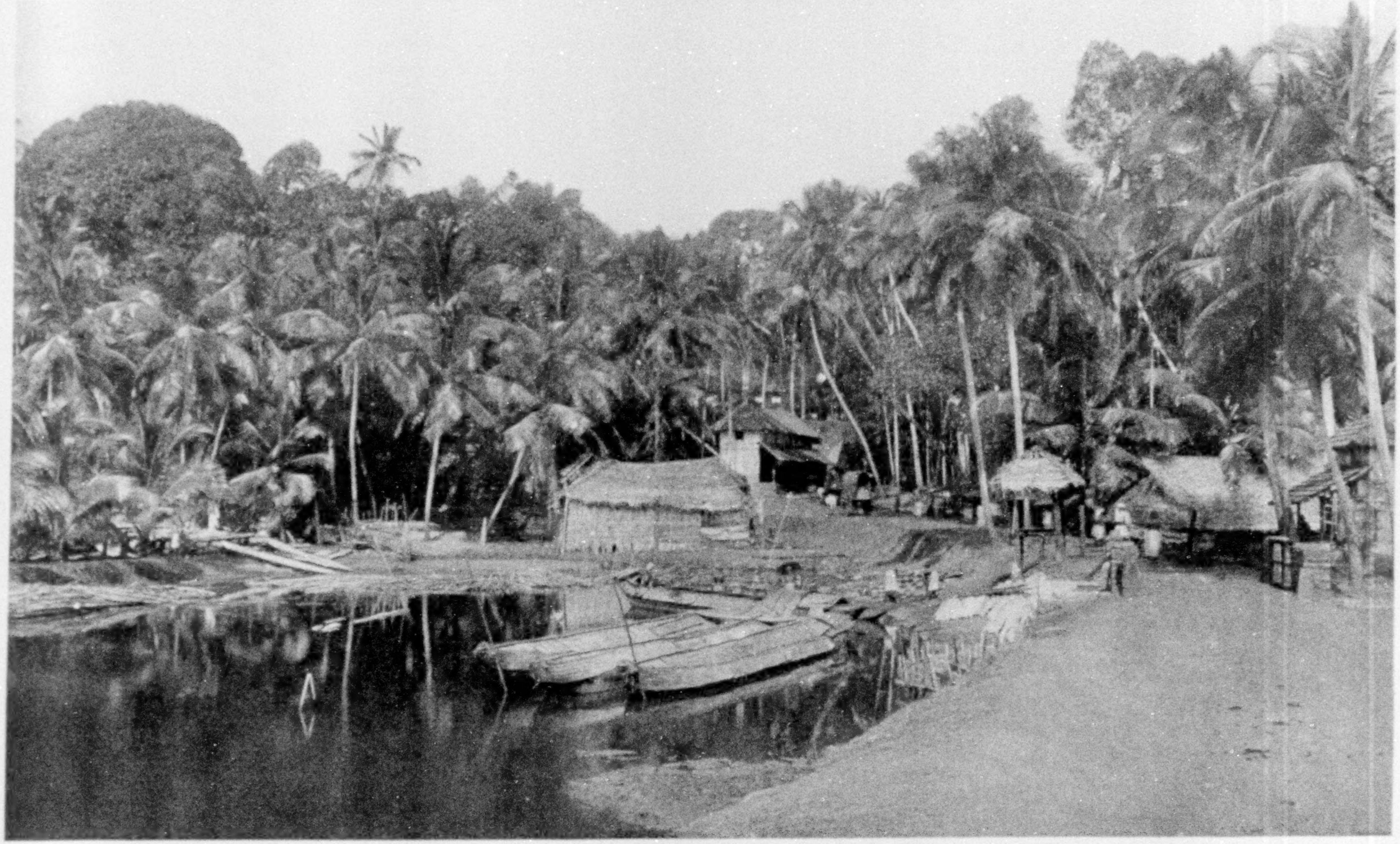
AN INDIAN "TALI," OR WEDDING CORD, CORRESPONDS TO A WEDDING RING

In India marriage occurs early. Among the Nyars of Malabar trial marriage is practiced, and the women have equal rights with men in terminating unsatisfactory unions. These are wives of the Malabar Coast, wearing the "tali," or marriage cord.



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A LANDING PLACE AT CALICUT, ON THE MALABAR COAST

Arab writers of the 13th century describe Calicut as a great commercial center, with magnificent buildings. The name Calicut means "cock fort." Tradition says the city got its name when a Malabar king gave the local Zamorin as much land as the area from which a cock crowing from the temple top could be heard.

carved. Beside the king was a page carrying a sword in a silver sheath.

Then the ships were dressed with flags, maneuvered outside the other craft, and the bombard boomed forth with a salute, "so that the city shook. On firing they threw a few balls from the large guns to seaward, which went skimming and ricocheting on the sea, causing great amazement."

The people poured out on the beach, the ships' trumpets sounded, Gama prepared to set the priest ashore with greetings to the king. The emissary hesitated, and one of the Moors suggested to the commander that the king probably intended him to be held as hostage.

GAMA'S QUICK WIT MAKES A FRIEND

The quick-witted Gama gave him a string of coral for his prayers and told him to tell his king that His Majesty's goodness of heart was sufficient assurance of safety; also, which he did not mention, the salute just fired had thoroughly awed the crowds on the shore.

Soon came more presents and more valuable ones, including cloves, ginger, nutmegs, and pepper. Gama, not to be outdone, set free the captive Moors of the sambuk and sent the boat and its cargo ashore to be disposed of by the king.

Meanwhile Vasco and Paulo da Gama debated which should go ashore. The commander's affection for his brother is always cropping out to deny that his character was invariably harsh. Vasco pointed out that Paulo should have commanded the fleet, but since that had not come about he (Vasco) would protect his brother and assume any risks of treachery, and if he came to grief Paulo was to continue with the ships.

This point being settled, the brothers "embraced several times with many tears and sincere love." When the king actually extended an invitation, however, the commander, for the sake of strategy or dignity, said his own king had forbidden him to pay such visits, but suggested that the King of Malindi come aboard ship.

"If I did that, what would my own people say of me?" was the gist of the king's reply.

A compromise was reached when the king was borne in a palanquin to the water's edge; all the townspeople came forth and Gama, with his officers, drew alongside in the ships' boats.

The captains "dressed themselves nobly and very splendidly." Gama was ensconced on a chair covered with green velvet. Rugs and carpets were strewn over the boats and they were bedecked with flags. Each carried two swivel guns.

In the absence of a "movie" camera, one must rely on "The Lusiad" of Camoëns for the best picture of the Portuguese:

"Nor less of pomp the Lusitanian shows
When, with his gallant retinue, advance
The Armada's boats, midway to welcome those
Of the Melindan on the bay's expanse.
Clad in the vogue of Spain, Da Gama goes,
All but the cloak, a gorgeous robe of France,
The web Venetian satin, and the dye
A glorious crimson that delights the eye."

For entertainment, the king had provided horsemen to fight a sham battle.

The Rajah went aboard the boat that bore Gama and pledged lifelong fealty to the King of Portugal. Whereupon Gama presented him with a sword, in an enameled case, with "a lance of gilt iron, and a buckler lined with crimson satin worked with gold thread."

After Gama departed the king ordered his crier to proclaim in the city streets that nothing was to be sold the Portuguese for more than it was worth. The next day Gama went ashore, and henceforth during their stay the Portuguese were as free to come and go as if they had been in Lisbon.

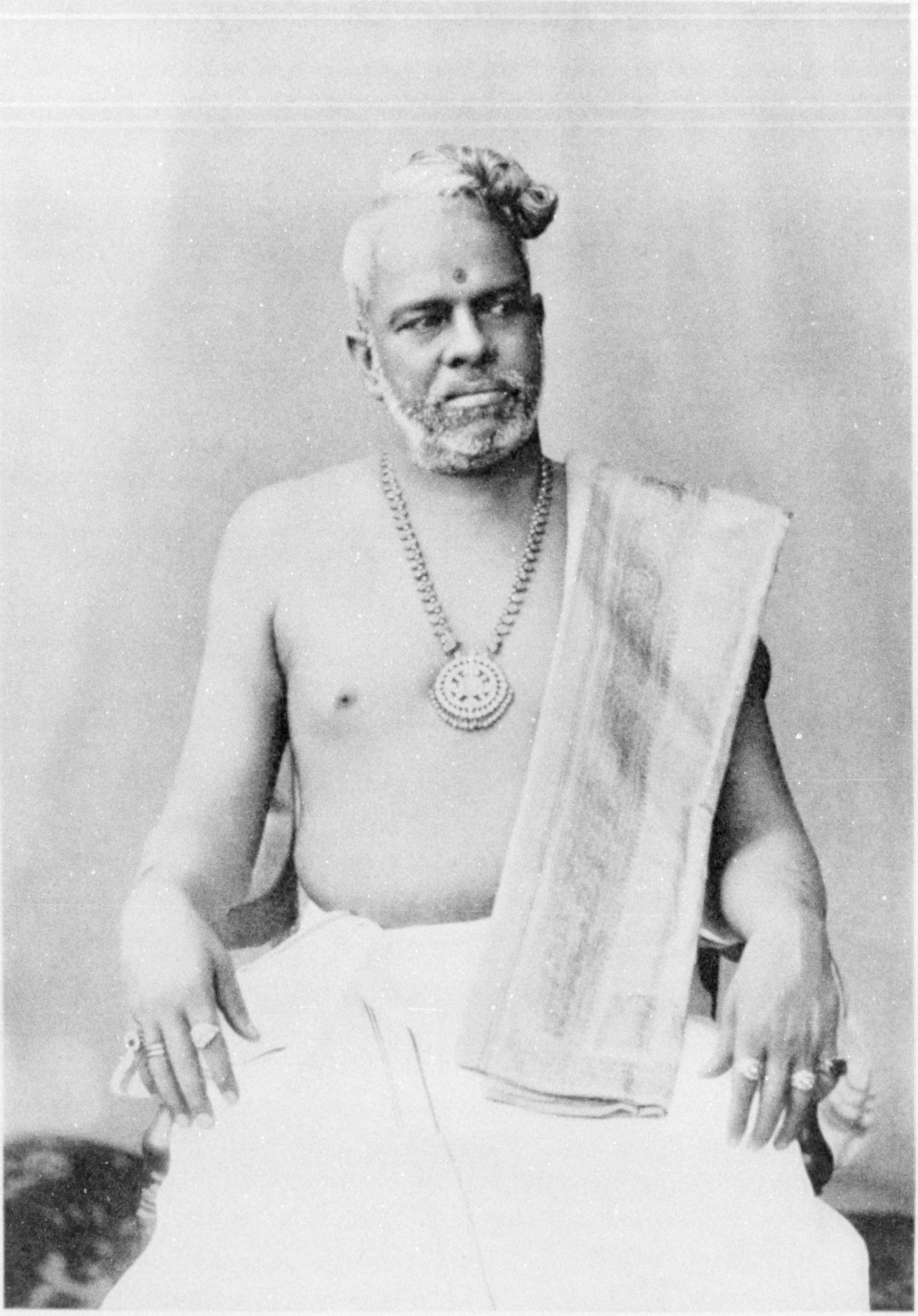
The seamen calked the ships, put on supplies, and learned how to make ropes of coconut fiber. They found these ropes were soft, would stretch, and were less affected by the salt water than their own.

AN EXCHANGE OF NONPOISONOUS MEALS

One more ceremony remained to cement their alliance. The king sent aboard a caldron of rice, roast mutton, rice cakes, rice-stuffed fowl, figs, and fruits.

The commander and captains seated themselves immediately and, in the presence of the king's messengers, ate of every dish he had sent, to show their confidence that the food was not poisoned.

In return the commander sent the king some preserved pears, between two silver basins, which he covered up with a napkin,



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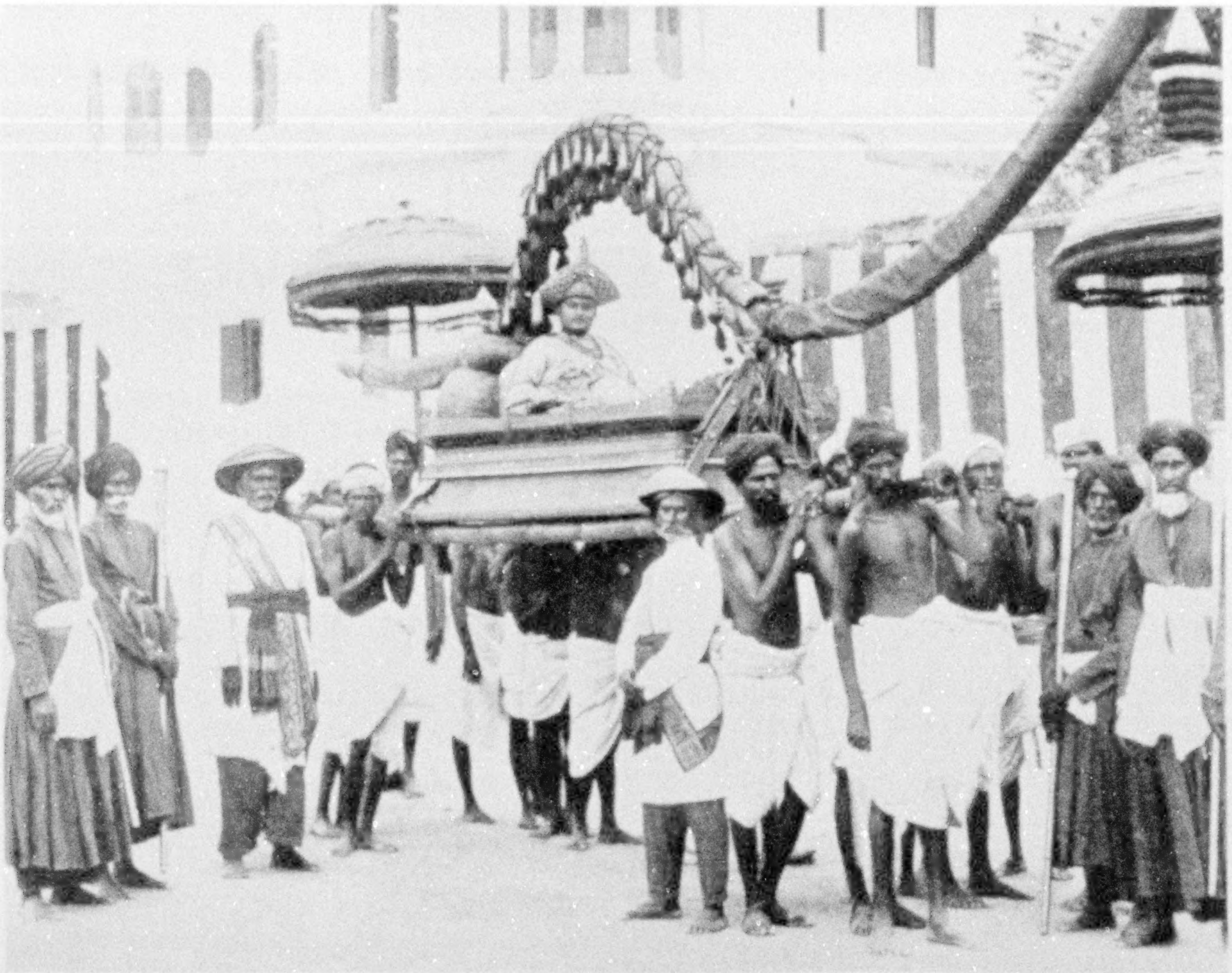
INDIA'S WEALTH OF JEWELS AMAZED THE PORTUGUESE EXPLORERS

Like a display in a jeweler's window, Gama beheld the Zamorin of Calicut richly bedecked with diamonds, pearls, rubies, and jewel-studded ornaments. Even his four-quart cuspidor was solid gold. Here, plainly, was a people not to be won with such glass beads as served Columbus in his trading. The present Zamorin, or Hindu Mayor of Calicut, India, is shown in formal attire.



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THE RAJAH OF ETTAIYAPURAM TAKES THE AIR IN HIS STATE PALANQUIN, GIVING WAY NOW, IN INDIA, TO THE AUTOMOBILE

and suggested that the dish be eaten, with water, after dinner.

The king ate the conserve, taking it with the fork Gama had sent, "also to show how much he trusted the captains."

It was now the king's turn to visit the *S. Gabriel.* He rowed out, accompanied by boatloads of musicians, all playing the *sivas* and kettledrums, and the harbor craft again flew their flags. After he had been shown over the ship he was seated in the commander's cabin at a handsome table laden with preserved almonds, sweetmeats, olives, and marmalade. The platters were silver, the napkins dainty bits of gold-embroidered cloth from Flanders.

MALINDI CHIEF PROVIDES PILOT

After the king had eaten, Gama "took a rich hand-basin chased with gilt and a ewer to match and went to pour water on the king's hands." The king, out of courtesy, declined this "finger-bowl" service and kept staring at the table appointments.

"If these men use silver," he sighed, "their king will not use anything but gold."

Before the fleet left Malindi the king sent out boatloads of farewell presents—biscuits, rice, butter, coconuts, live sheep and salted mutton, and "much sugar in powder in sacks." More valuable, however, from the explorers' standpoint, were the pilot he provided and the hints he gave about the exports and etiquette of Calicut.

With their huge sails bellied by a stiff breeze, the three little ships cut a straight course across the uncharted Arabian Sea for 23 days. They skirted the Laccadive Islands and turned east, heading for Calicut.

Soon the lookout spied the mountain range of Malabar's coveted coast. All hands rushed to deck; one can picture a scene of wildest joy. Gama released all prisoners, so "there might not be one sorrowful heart on board the fleet." The greatest moment in Portuguese history had arrived!

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ALL OVER INDIA, IN RECENT YEARS, EDUCATION HAS ADVANCED ENORMOUSLY, IN SPITE OF CASTES AND DIVERSE DIALECTS

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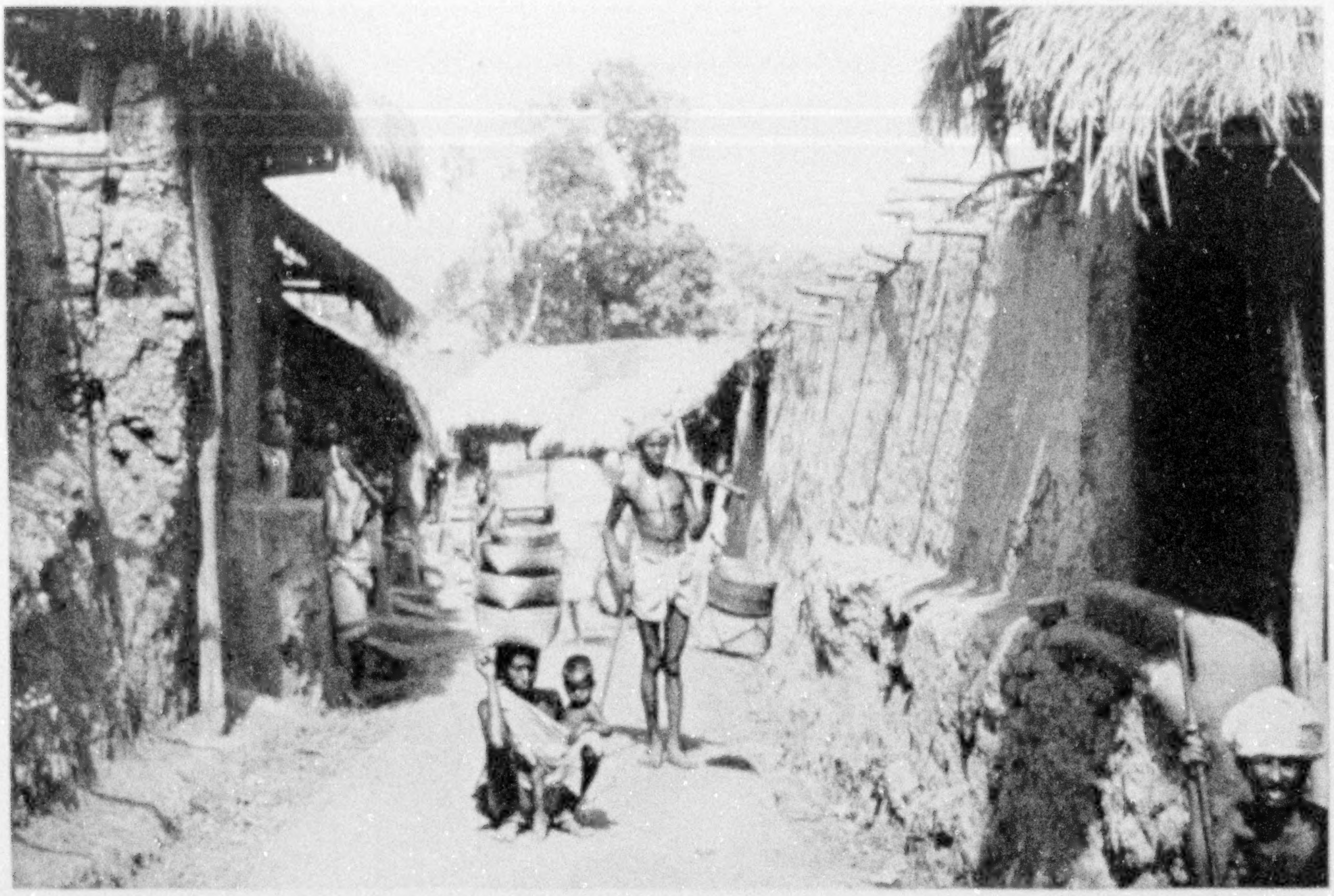
CLOTH HAS LONG BEEN A BIG ITEM IN INDIAN TRADE: THE CITY OF CALICUT GAVE ITS NAME TO "CALICO"



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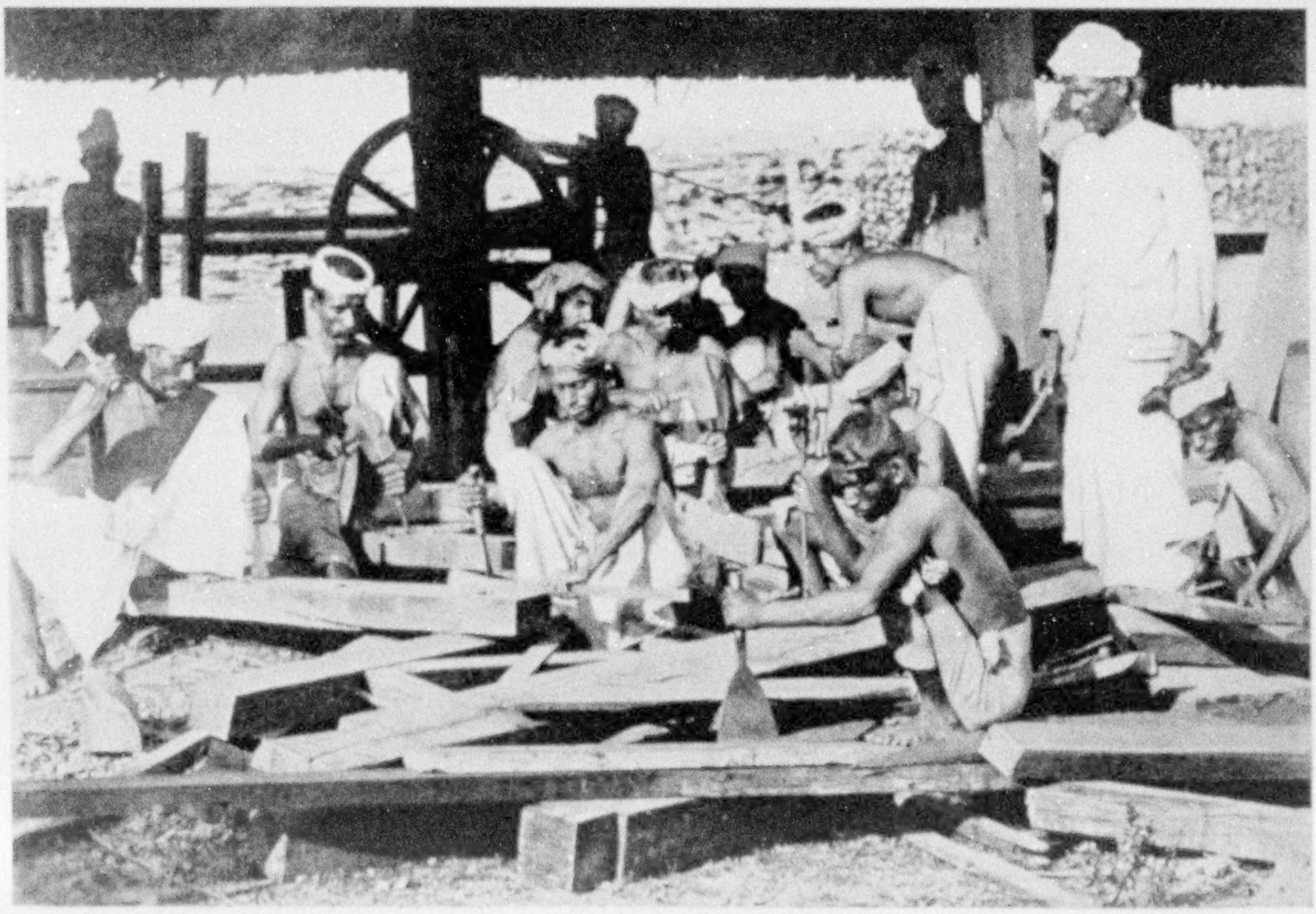
DESPITE THE AGE OF WHEELS, INDIA STILL CARRIES MUCH OF ITS FREIGHT UPON ITS BACK OR HEAD: MALABAR PORTERS



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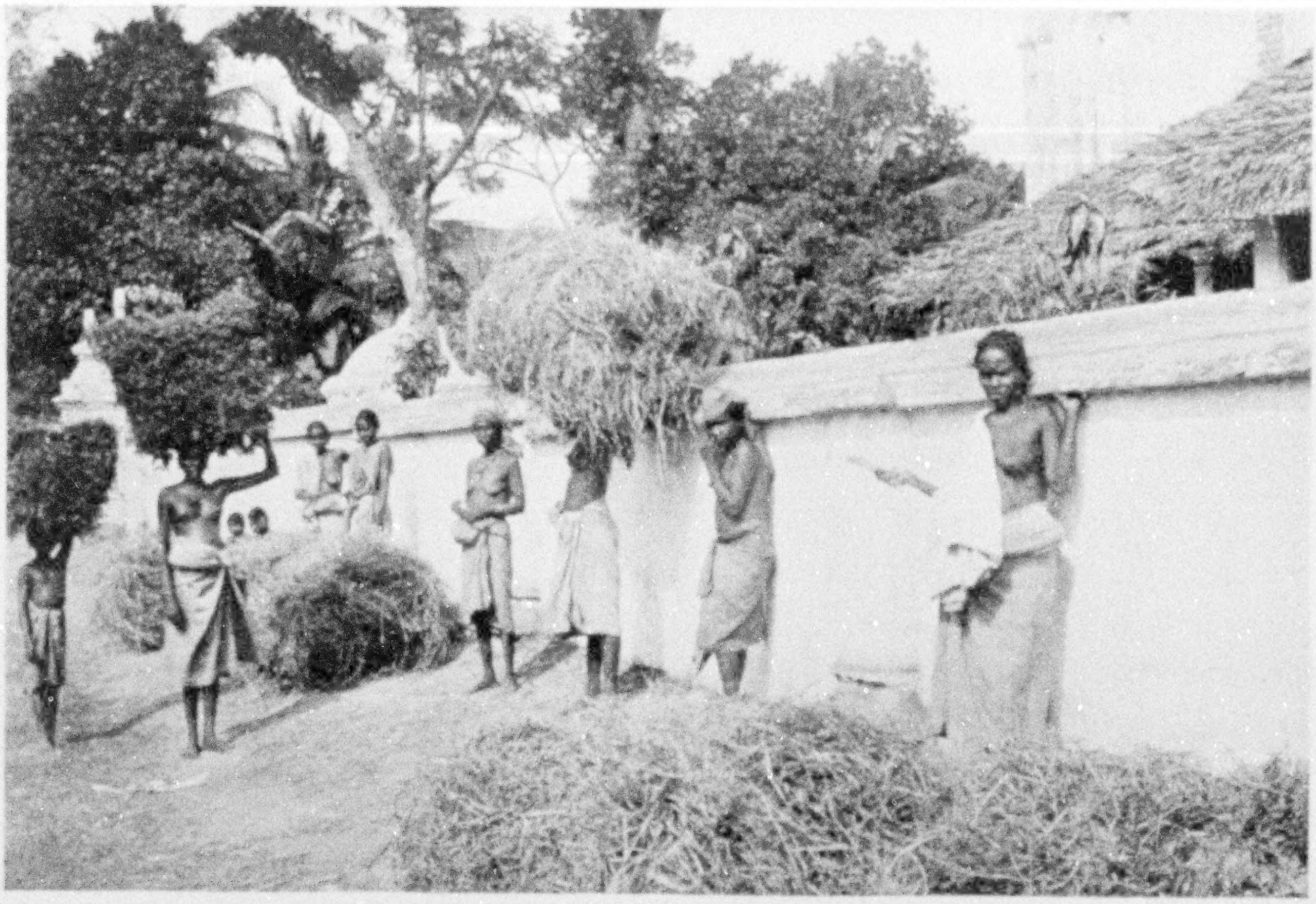
CARPENTRY IS THE BASIS OF SOUTH INDIAN ARCHITECTURE: WITH SIMPLE TOOLS, WORKERS ACHIEVE ARTISTIC RESULTS



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"MAUD MULLER ON A SUMMER'S DAY" IN MALABAR, INDIA

Was it portentous that huge clouds already were piling up to blot out the peaks, and presently a blinding tropical rain curtained the shore?

When the downpour subsided and the pilot could get his bearings, the ships proceeded, and anchored off Calicut in May, 1498, ten months and a half after they set sail from Lisbon.

A VERSAILLES OF VEGETARIANS

From visitors who came out to the ships and from emissaries he sent ashore, the commander gleaned information about Calicut before he landed to pay his celebrated visit to the Zamorin.

That monarch, he learned, lived in a stone palace outside the city, at a sort of Versailles of Malabar. He was a Hindu and his extensive court was made up of the priestly, vegetarian Brahmans and the polyandrous, meat-eating Nairs, scions of the fighting caste.

One of the latter came aboard ship, and the gaping crew saw a dark, slim, lithe little man, naked except for a girdle of white cloth. His black hair was plastered down in modern "movie" hero fashion and he wore earrings of gold. He bore a round shield with a gold arm band and grasped a short, broad-pointed sword. Night and day, waking and sleeping, as long as he lives, a Nair is never parted from his shield and sword.

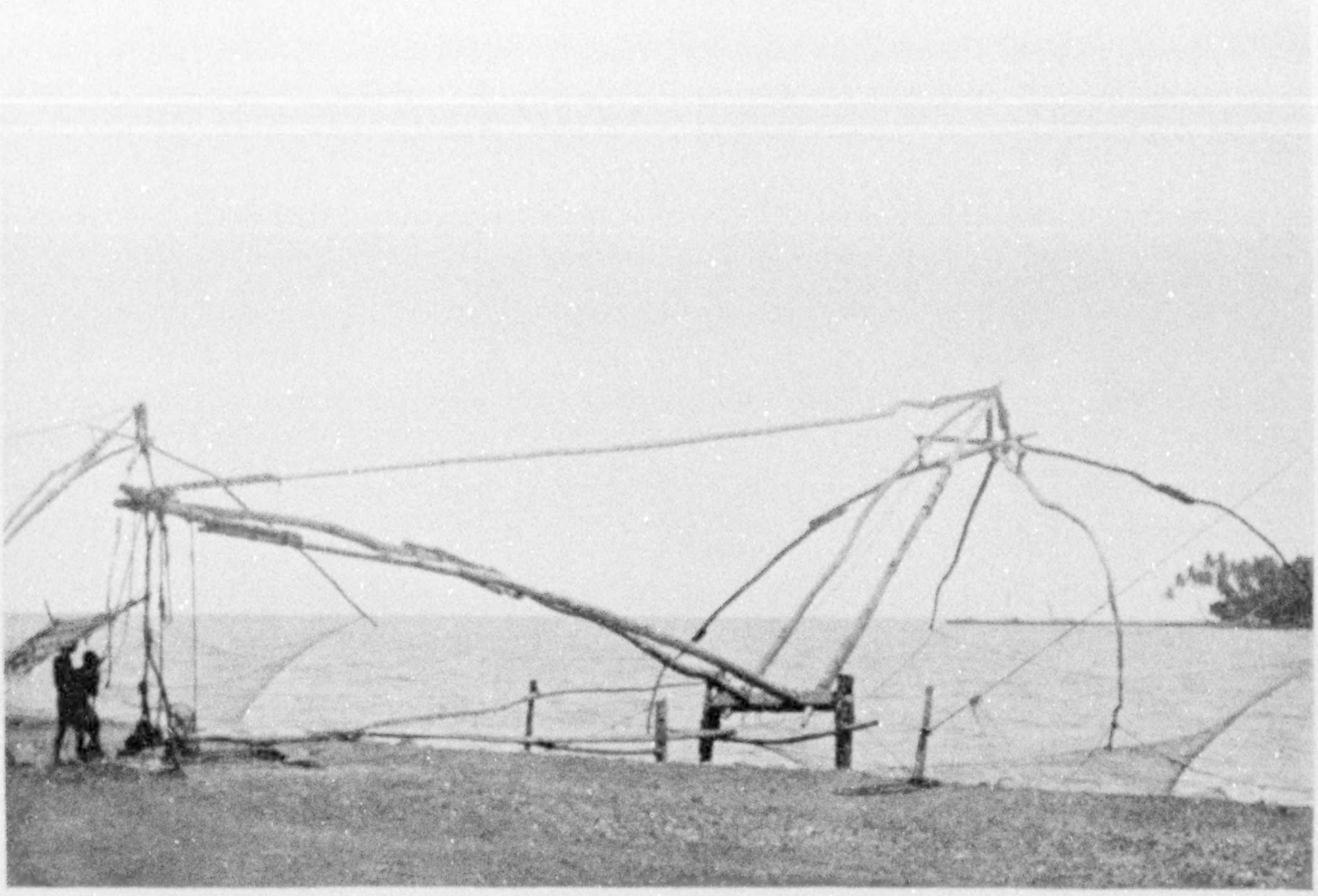
The Zamorin could muster 200,000 fighting men, headed by these Nairs, so Gama was told, with probable exaggeration.

The Brahmans were the aristocrats of the Hindus. The lower native castes, comprising the great mass of the common people, sank to levels of human docility beneath that of the slaves then being introduced into Europe. Correa describes these "low people" as being so "accursed" that they dare not go by a road without shouting, for if a Nair should suddenly meet them he would kill them.

To-day caste still imposes rigid restrictions in this region.

THE "MILLIONAIRES' ROW" OF CALICUT

The Mayfair district of Calicut comprised rows of commodious wooden houses roofed with palm leaves. There lived the Mopla merchant princes, who had clung to the faith of their Moslem fathers and seized the business of their mothers'



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A CRUDE BUT EFFECTIVE WAY TO FISH

Seen along rivers and canals in China, the Philippines, and India, such clumsy devices of tilting poles as this at Malabar let a net down into the water. Then bait is scattered. When fish swim in, the net is lifted.

Hindu relatives, thus creating a Mohammedan monopoly of maritime trade.

And Calicut's trade was no mean item. For many years this port, where no European ship had anchored until Gama came, had shipped the spices that graced the tables of the rich in every civilized city of Europe.

To-day sugar has replaced the spices as the world's favorite flavor. And few pause to consider that the lowly pepper vine, the ginger root, and the cinnamon tree beckoned the Spaniards and the Portuguese, then the Dutch and the English, to some of the most daring voyages and greatest discoveries in the annals of geography.

The spices which Europe was eating were costly. In England, at this period, a pound of cloves was worth two cows. The middleman's profit is no new problem.

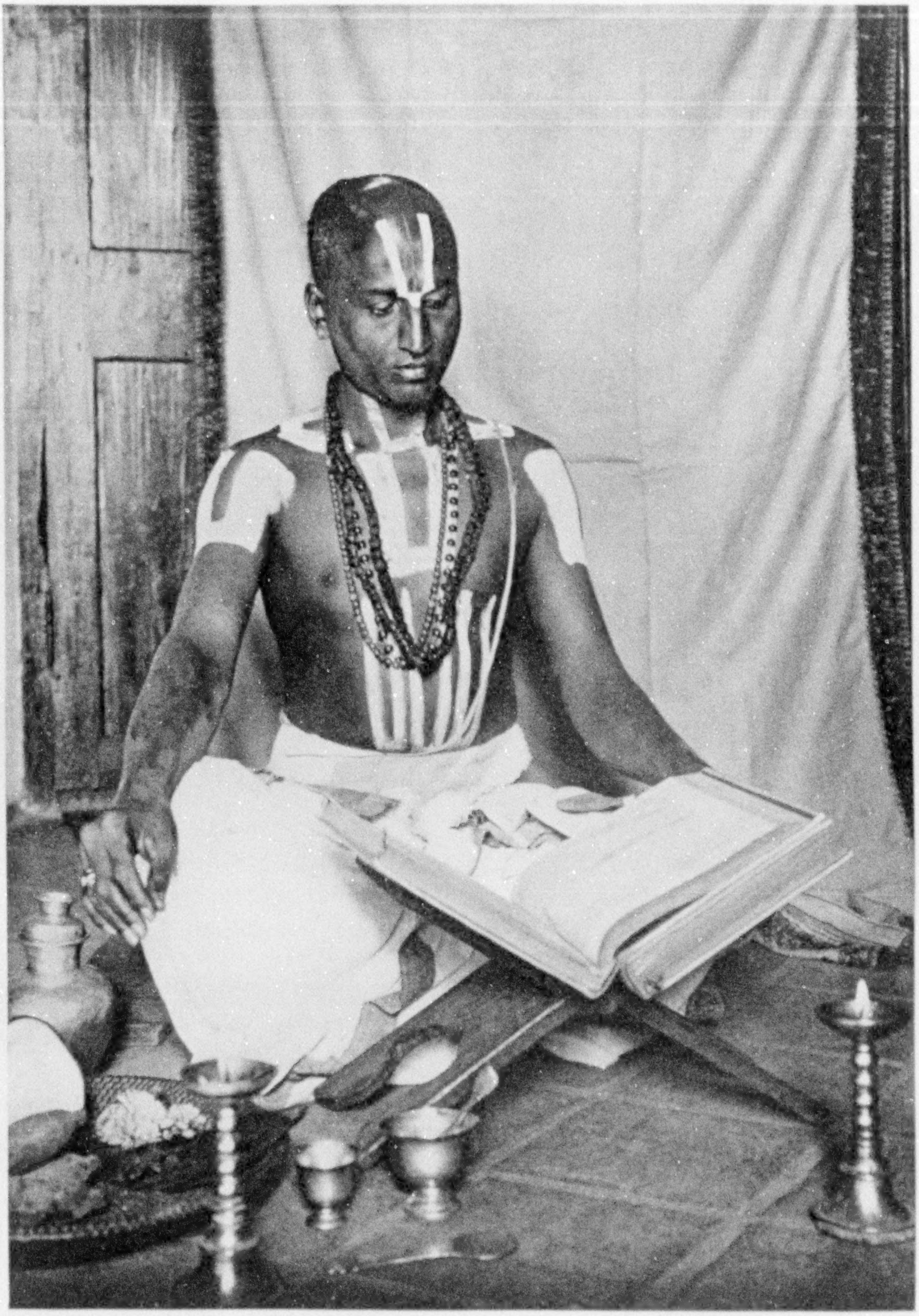
Ships of Mecca's merchant fleet put out from Calicut with cargoes of cinnamon, already transported from Ceylon, cloves from Malacca, and ginger and pepper from nearer sources, in India. It took weeks to voyage to Jidda, for these vessels sailed before the wind; they could not tack.

There they paid duties and transshipped the goods to smaller vessels bound for Gulf of Suez ports. Upon arrival, more customs were paid, and the goods were loaded on camels' backs for a 10-day trip to Cairo.

Cairo took toll and transferred the spices from camel carriers to river boats plying down the Nile to Rosetta, which assessed its levy and loaded the goods once more on the lumbering camel freight.

Thence it was only a day's journey to Alexandria, where the goods were piled up to await the coming of a galley from Genoa or Venice. From these cities they filtered through more profits and tariffs to the ultimate buyers of Europe.

Thus some of the tolls these spices paid bought gold cuspidors for the betel chewers of Calicut, subsidized a North Africa sovereign who had convinced the Grand Sultan of Egypt that he was waging war on Prester John, and helped build the palaces and paint the pictures which lure tourists to Italy to this day.



Photograph by Dr. E. W. T. Slater

IN INDIA CASTE IS OFTEN DENOTED BY PAINT MARKS

The early Portuguese explorers, at first taking the people of India to be a class of Christians, thought the Indian priests' white paint was a form of holy water. This Brahman of Mysore is reading the sacred books of India.

Vasco da Gama realized his coming was bound to incite jealousy among the Mecca traders and declined to enter the harbor of Calicut for fear of treachery. Instead he sailed to a cove 15 miles north, where he went ashore and started back to Calicut in a palanquin.

THE "AUTO TAX" OF CALICUT

Palanquin owners, he later learned, had to pay the king a fee, just as modern car owners must pay an automobile tax. Some of these vehicles were luxurious. A "limousine" litter, for example, consisted of a mattress suspended by cloth from poles with silver-mounted ends. The mattress was made of silks threaded with gold and ornamented by heavy fringes. Silken cushions were provided for the passenger, who was propelled by a 6-man-power motor.

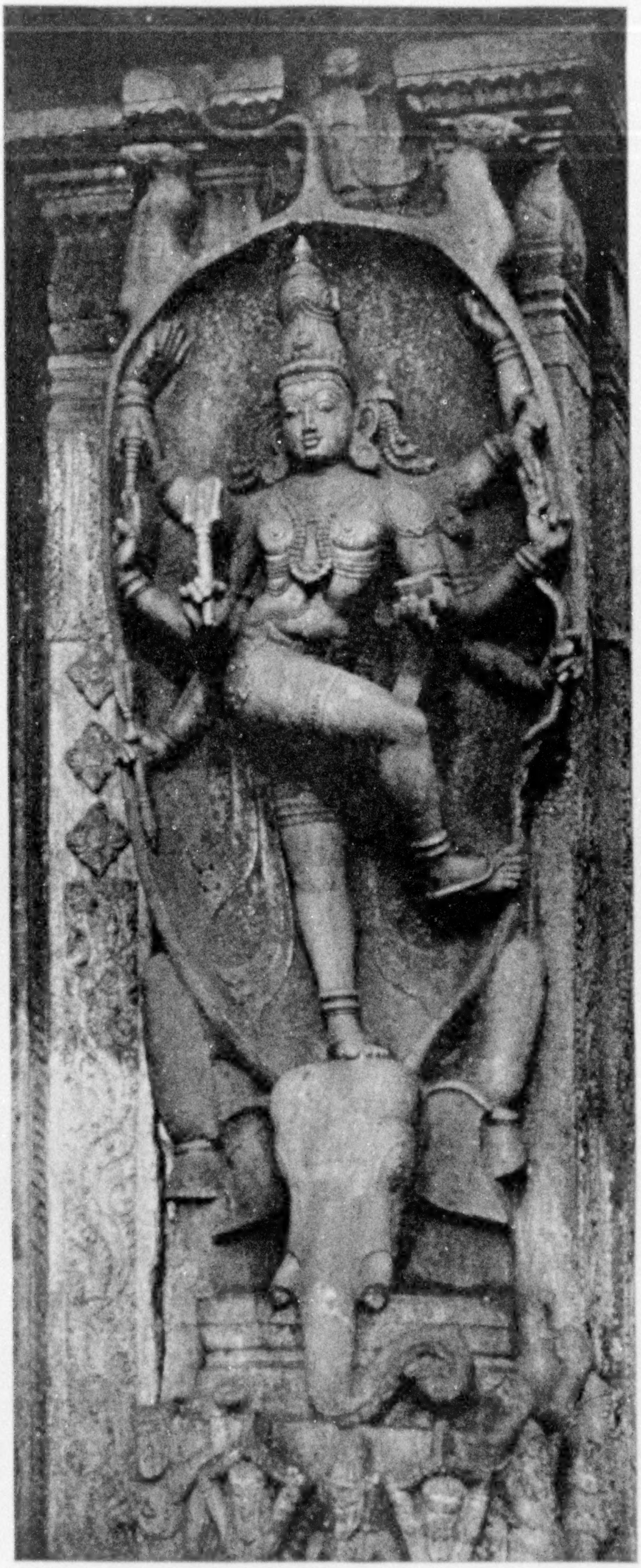
On the way the Portuguese were entertained at the home of a native dignitary with a meal of buttered rice served on green fig leaves, and boiled fish.

At Calicut they first were taken to a Hindu temple. They saw a stone structure with tiled floors, which they entered by a gate hung with seven tinkling bells. They thought the edifice a church and construed the representations of Hindu deities as Christian saints crudely portrayed, since some had protruding teeth and others had four or more arms.

One member of the party wrote: "They threw holy water over us and gave us some white earth, which the Christians of this country are in the habit of putting on their foreheads, breasts, around the neck, and on the forearms."

The "white earth," of course, was the mixture of ashes, cow dung, and dust used by the Brahmans as an accompaniment of prayer. The "Christians" were Hindus.

Then, according to another narrator, Gama went to a house set



Photograph by Nicholas and Company

THE VIRA-BHADRA, MADURA, INDIA

Gama's pious sailors mistook the sacred figures and carvings of Hindu gods for crude effigies of Christian saints. The elephant figures prominently among India's sacred symbols.

Photograph from C. E. Engelbrecht

A BETTER VIEW OF THE AZORES THAN VASCO DA GAMA HAD

Over these islands of windmills, pineapples, and Portuguese the *ZR-3* (now the airship *Los Angeles*) flew on her way from Germany to the United States. The Portuguese fort is on Terceira Island.

aside for one of his traders, to dress for the reception. He emerged in a long coat of red satin with brocade lining, over a blue tunic bordered with gold. From a red belt hung a handsome dagger and across his shoulders was a wide enamel collar.

The Portuguese proceeded through the streets, followed by the ships' trumpeters in red and white liveries, with their burnished trumpets decorated with silken streamers.

CROWDS BLOCK EXPLORERS' PROGRESS

Throngs crowded the thoroughfares, peered from every roof top, and finally almost blocked the visitors' progress, until there came an official sent out from the king's household. He was a sort of royal secret service guard who was empowered to sever the head of any uninvited guest. He helped clear a way for the visitors, but before the palace the throng grew so great that several natives were injured.

It was late at night when Vasco da Gama concluded his famous first visit to the Zamorin (see text, page 504), and rejoined his companions, who awaited him on a balcony. They were busily examining the large iron lamps, each with four wicks fed by oil, mounted in candelabra fashion.

Another blinding tropical rain had set in and the streets ran with water, so Gama in his finery was taken to the nearest available home as fast as a palanquin could carry him.

The next day, Tuesday, he wrapped his presents for the Zamorin, in spite of well-meant warnings that they were inadequate, and on Wednesday he presented them. On this visit he was kept waiting four hours, and, though the Zamorin was frankly scornful of his gifts, he inquired what Portugal had to sell and told Gama he might land his merchandise and dispose of it.

The Moors, meanwhile, had been as busy as the Portuguese. They cautioned the king's ministers that Gama either was a fugitive from justice or a spy sent out in the guise of a merchant.

GAMA DECLINES TO RIDE BAREBACK

Some narrators insist they also bribed the bodyguard the king assigned to conduct the Portuguese back to their ships. Others interpret Gama's difficulties to misunderstandings.

The first of these occurred on Friday, when a horse without a saddle was brought around for Gama to ride. He refused the mount and demanded a palanquin, which was provided. Probably no slight was intended, since riding without saddles was a common practice in Calicut.

On the way to Pandarani his suspicions further were aroused by the disappearance of some of his companions. Later it developed they had been unable to keep up with the fleet-footed palanquin bearers and had lost their way.

When they arrived the sun had set and Gama was requested to wait until next day before going out to his ships. He grew so angry he could eat no dinner. The next day his guards suggested he send word to the ships to approach nearer the shore, so they could row out to them more easily, and Gama, scenting treachery, sent word to his brother to keep the ships well out of the harbor.

Armed men patrolled the commander's house, which he construed to mean detention, but they may have been intended only as a guard. It was several days before he was rowed out to his ships and the goods were brought ashore.

There was no mistaking then the attitude of the Moslems. They depreciated the goods, refused to trade, and when they saw a Portuguese they ostentatiously spit on the ground.

The Zamorin, however, showed his good faith when this was reported to him. He first sent Hindu merchants to look at the goods, and when they did not buy he ordered the merchandise conveyed at his expense to Calicut, so that it might be more accessible to customers.

Selling unknown goods in a strange land with no fixed exchange rates entailed an interesting procedure.

FIXING A SCALE OF WEIGHTS AND MEASURES

The commander appointed a factor, or steward, and a clerk, and sent in first "a chest of one hundredweight of unwrought branch coral, and as much of vermilion, and a barrel of quicksilver, fifty pigs of copper, twenty strings of large cut coral, and as many of amber, and five Portuguese of gold, fifty cruzados, and a hundred testoons in silver."

Also he set up a table of green cloth, to be a sort of counter, and a wooden balance and weights.

The Zamorin's overseer examined each article and fixed a price in native money. Then, since the Portuguese wished also to use their own currency, he assessed each kind of coin they had, proved it with touchstones, which he handled most deftly, and thus a schedule of prices was drawn up and also a series of weights was agreed upon.

WHEN KINDNESS PROVED A FAULT

In accord with Gama's instructions, there was no haggling; his steward accepted the rates and weights without question, though it soon was apparent that the Portuguese were to be heavy losers.

Furthermore, also acting under orders, the steward accepted what goods were delivered him without questioning the quality.

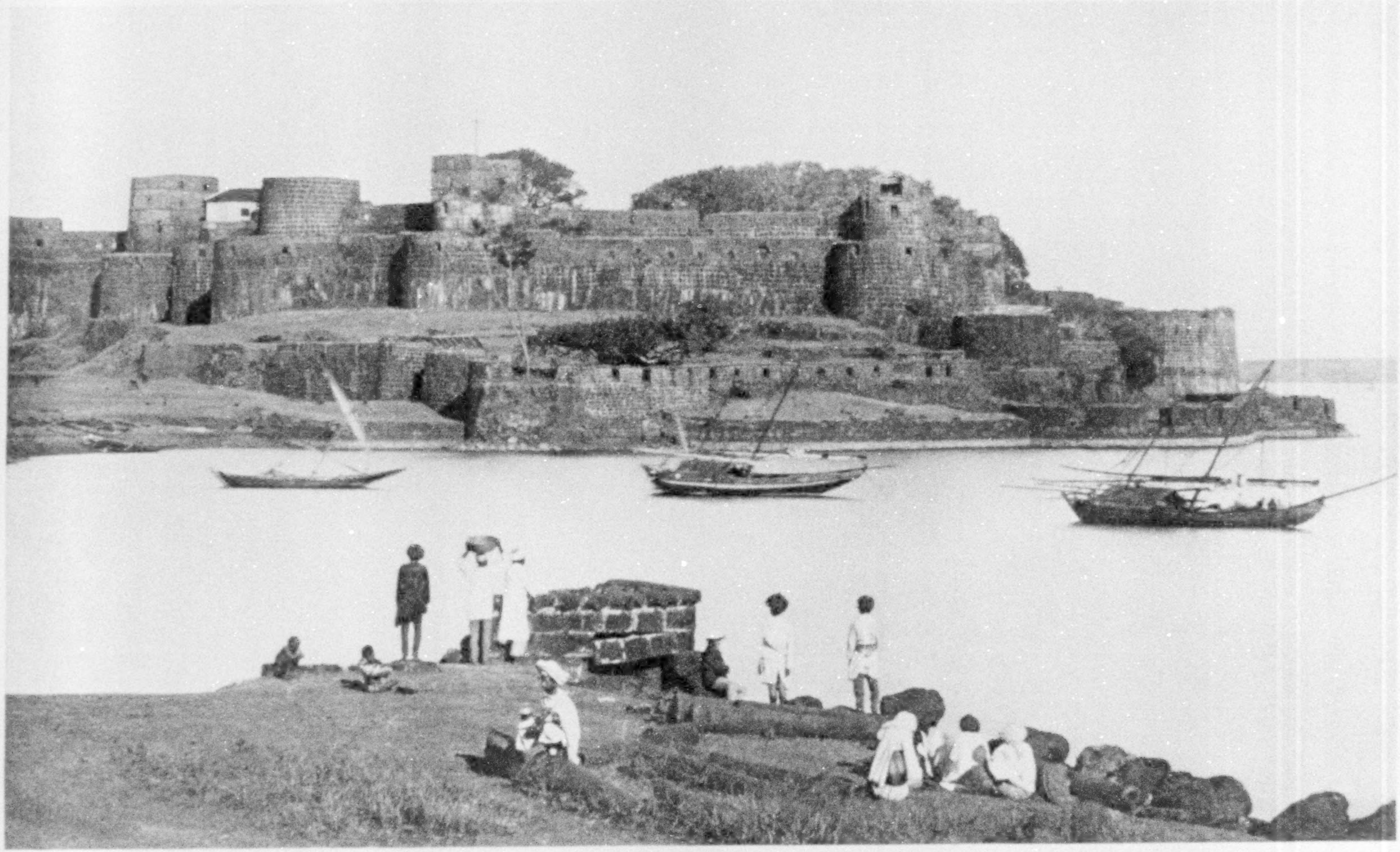
One day the Portuguese ordered ginger, and the spice came heavily smeared with red clay. This was in accord with export practice, because the clay preserved the strength of the condiment; but the clay was far in excess of the usual amount. He mildly requested an additional consignment, with more ginger and less clay, explaining he was not protesting the price, but that he wished good samples of each product to present to King Manoel.

All this had the desired effect upon the Zamorin; he was elated at such profitable customers. But it had an unexpected boomerang.

The Moors conveyed to him a message which said in effect: "We told you so. These people can't be merchants. And they are not fools. They must be spies or pirates masquerading as traders. Anyway, what can Your Majesty hope to gain from a market which it takes a year's voyage to reach?"

While this wholesale trading was going on, small parties of sailors went ashore daily to hawk clothing and bracelets to swell the fund for buying samples of spices and gems.

Neither procedure proved profitable; so Gama, being ready to depart, sent a point-blank request to the Zamorin for certain specified gifts for his king. Diogo Dias, his emissary, brought back no presents



OLD STONE FORTS, HINTING AT THE POWER THAT ONCE WAS PORTUGAL'S, STRETCH FROM AFRICA TO CHINA

Considering their tiny ships and primitive weapons and equipment, the wealth and strength of their Arab and Indian enemies, and remembering the long, perilous sea voyage around Africa, Portugal's fifteenth-century conquest of the East must stand for all time a brilliant chapter in the annals of world exploration. The fortifications here shown are at Goa, India.

but a bill—a bill for the equivalent of about $1,000 for custom duties on goods landed, with the warning that it must be paid before the ships could sail away.

To compel payment the Zamorin's zealous agents threw a guard around the warehouse where Portuguese goods were stored and held Gama's steward, clerk, and a number of sailors as hostages.

PRISONERS GO ON "HUNGER STRIKE"

The explorer retaliated by seizing 18 Hindus. Among them, unfortunately, were six Nairs, and the hostages of this group had to be exchanged daily, because each went on a "hunger strike" against food prepared by "unclean" hands.

It now was late in August. The ships, which had been at Pandarani since June, moved to Calicut. Meanwhile Dias visited the Zamorin a second time and apparently convinced him that his aides had been bribed. He disavowed any knowledge of the seizure, sent to Gama his famous letter for delivery to the King of Portugal, and ordered the Portuguese hostages and goods released.

Gama retained five of the Calicut subjects, either as indemnity for goods he did not recover or to promote friendly relations when he should return to India.

Threatening vengeance against the Arabs, Gama sailed away from Calicut August 29, 1498, skirted the coast northward to Goa, which remains to this day a patch of Portuguese India, and laid over at the Anjidiva Islands to repair his ships.

SCURVY WORSE ENEMY THAN STORMS

From that vicinity he struck out across the Arabian Sea again, making for friendly Malindi; but storms buffeted the ships and calms spread death among the crews, for it took nearly three months to cross. Scurvy broke out, killed 30 sailors, and laid the rest so low that at times only seven or eight men were available to work each vessel.

Even the indomitable Gama and his captains were on the point of turning back to India when the African shores were sighted off Mogadishu.

One can understand why, when Gama found the natives hostile, "not being in the best of temper, he battered the city with his cannon and sank the vessels in the harbor."

Sailing southward, he encountered eight Arabian ships, which he attacked, sinking some, while the rest took flight, and put into Malindi, where he was cheered by the princely hospitality of the Rajah and his men's health was restored by the fresh fruits and vegetables so bountifully provided.

Toward the end of February he reached Zanzibar, where he found natives engaged in trading with the calicoes of Mombasa, gold of Sofala, and silver from Madagascar.

Near Mozambique the *S. Raphael* had been abandoned because there were not enough men left to man her. The storeship previously had been broken up.

The two remaining ships doubled the Cape again on March 20. Late in April they parted company, Nicolau Coelho taking the *Berrio* to Lisbon, while Gama made for the Azores in the *S. Gabriel* because of the severe illness of his brother. He won his race with death, but the victory was short-lived. Paulo da Gama died the day after he landed at the Island of Terceira.

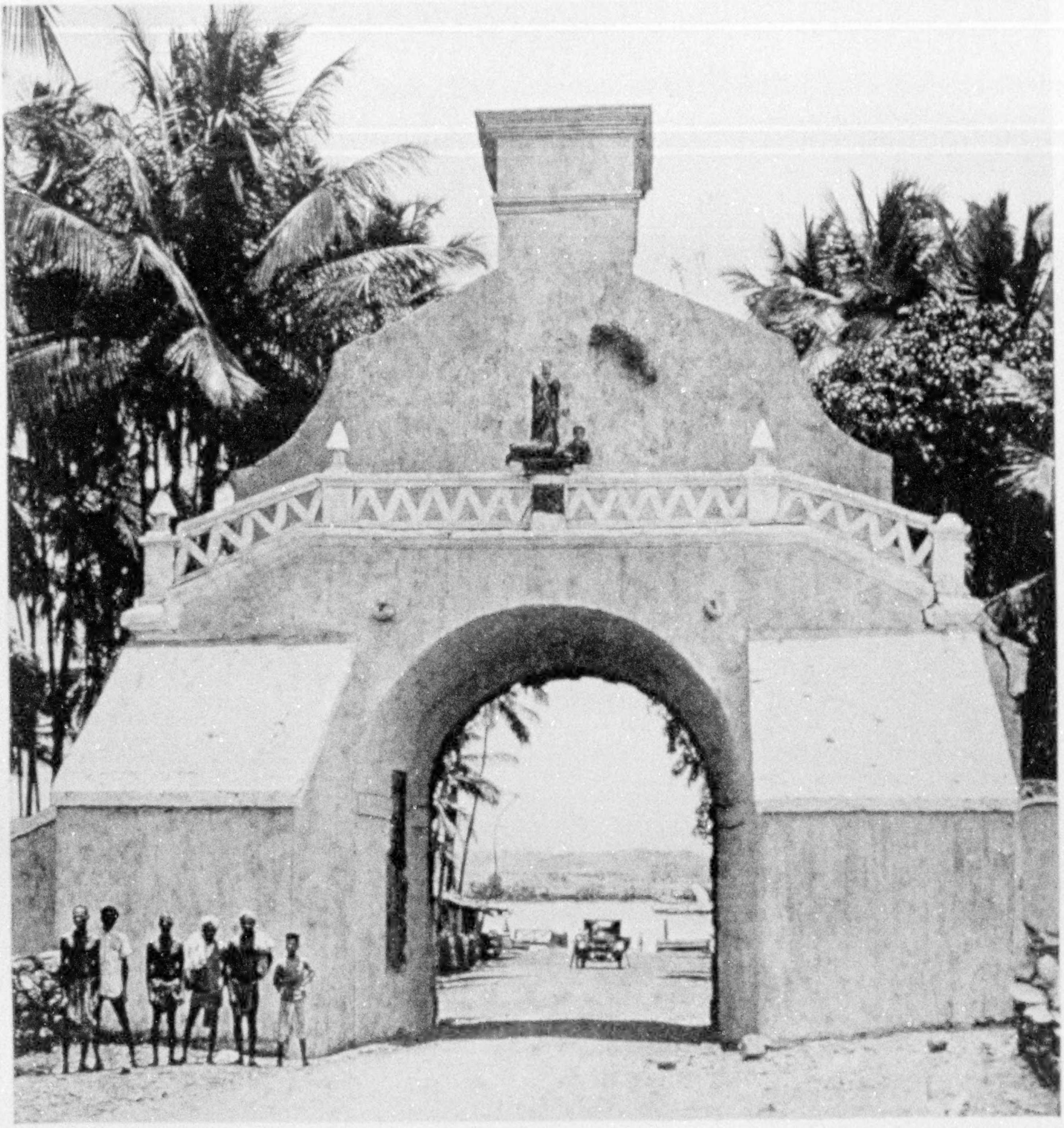
EXPLORER MOURNS BROTHER, THEN ENTERS LISBON IN TRIUMPH

About the first of September, the date is not certain, the battered flagship put in at Belem, where Vasco da Gama spent about ten days in mourning for his brother, and then made his triumphal entry into Lisbon.

He had lost his brother, half his ships, and two-thirds of his men, but his two years' voyage had accomplished its purpose. He found the "Christians and spices" he sought, and Portugal was mistress of the sea route to India.

The grateful King Manoel affixed a "Dom" to Gama's name, granted him a pension, and later made him "Admiral of India," which title conferred certain valuable trading rights.

The monarch himself assumed the expansive designation, "King, by the grace of God, of Portugal and of the Algarves, both on this side the sea and beyond it in Africa, Lord of Guinea and of the Conquest, Navigation, and Commerce of Ethiopia, Arabia, Persia, and India."



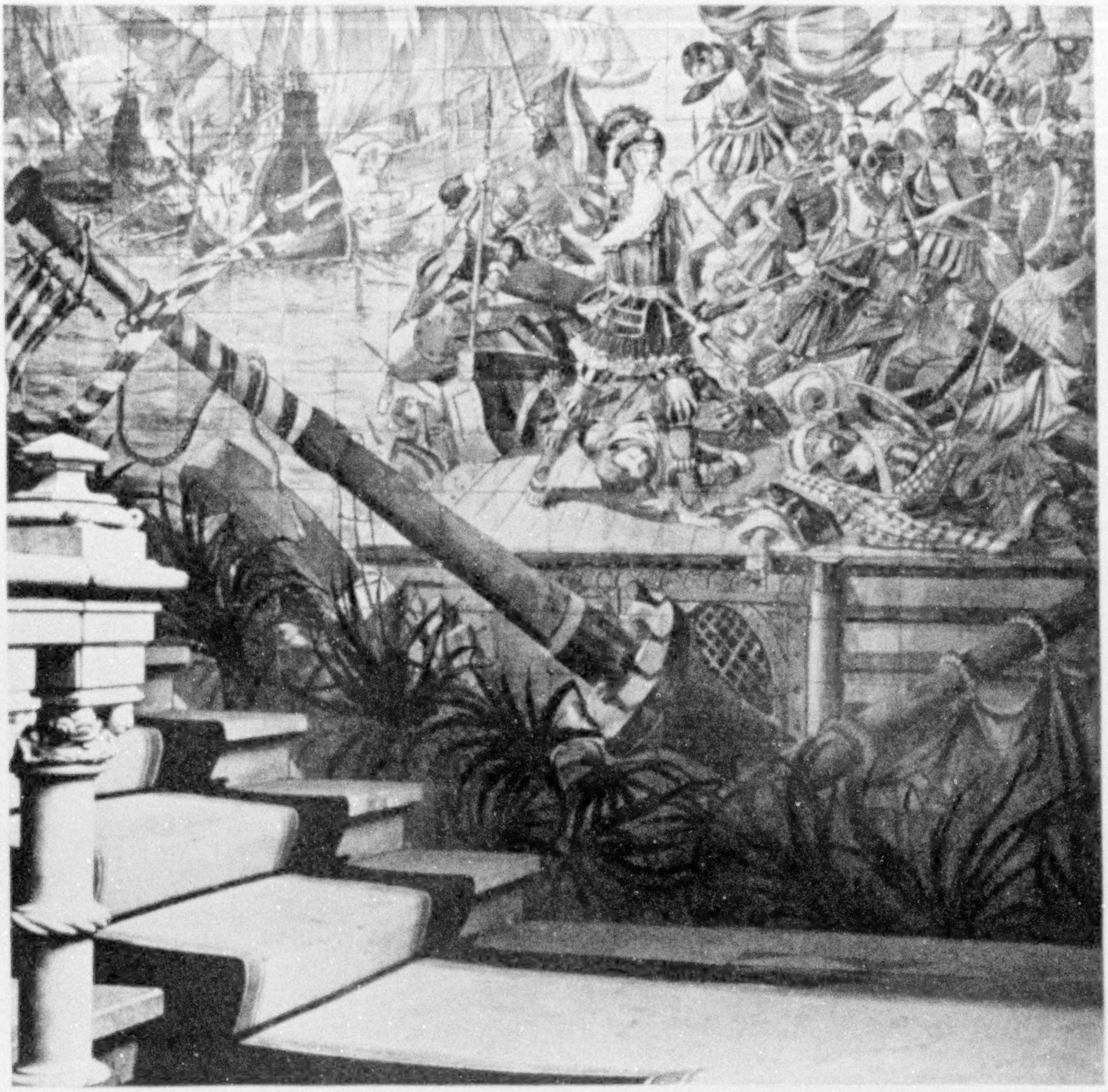
Photograph by Cowling from Galloway

TINY GOA COLONY IS A REMNANT OF PORTUGAL'S DOMAIN IN INDIA

Time was when Portuguese power ruled the sea from Africa around to China. To this day the whole Far East is dotted with aristocratic Portuguese names, reminiscent of days that were. But now, of all the rich India conquered by Gama and Alboquerque, only Goa, Damõa, and a small island are ruled by Portugal. Nova Goa is capital of the district.

Portugal's supremacy was brief, but the "little hero nation" had a profound effect upon the history of the Western World. Vasco da Gama sounded the commercial knell of Alexandria, Genoa, and Milan, and also of the Turkish and Barbary pirates who had fattened at the Mediterranean table, and he rang up the curtain on the new trade world that henceforth was to radiate from Cádiz, Lisbon, Bristol, and Antwerp. Likewise the riches that had fostered the science and art of the Italian city states gradually shifted to England, France, and the North Sea countries, whose peoples created new art forms and new ideals, of which America is so largely the inheritor.

His success had an even more immediate effect upon the New World. In less than a year Pedro Alvares Cabral set sail from Lisbon with an armada of thirteen ships and, veering farther to the east than Gama, touched at South America and claimed for Portugal the area that now is



Photograph by A. W. Cutler

THE FIGHTING DUKE OF ALBOQUERQUE LANDS IN INDIA

In Portugal's dramatic oriental conquests, Alboquerque played an heroic part. Besides building forts and "factories" in India, he took Ormuz, that famous treasure isle of Sindbad; he besieged Aden, and once planned to conquer Egypt by diverting the Nile to starve the country out. This painting appears on tiles in the Palace Hotel at Bussaco, Portugal.

Brazil. He passed on and reached Calicut, little dreaming that his incidental, and perhaps accidental, discovery was to become a far richer prize for Portugal than the Indies.

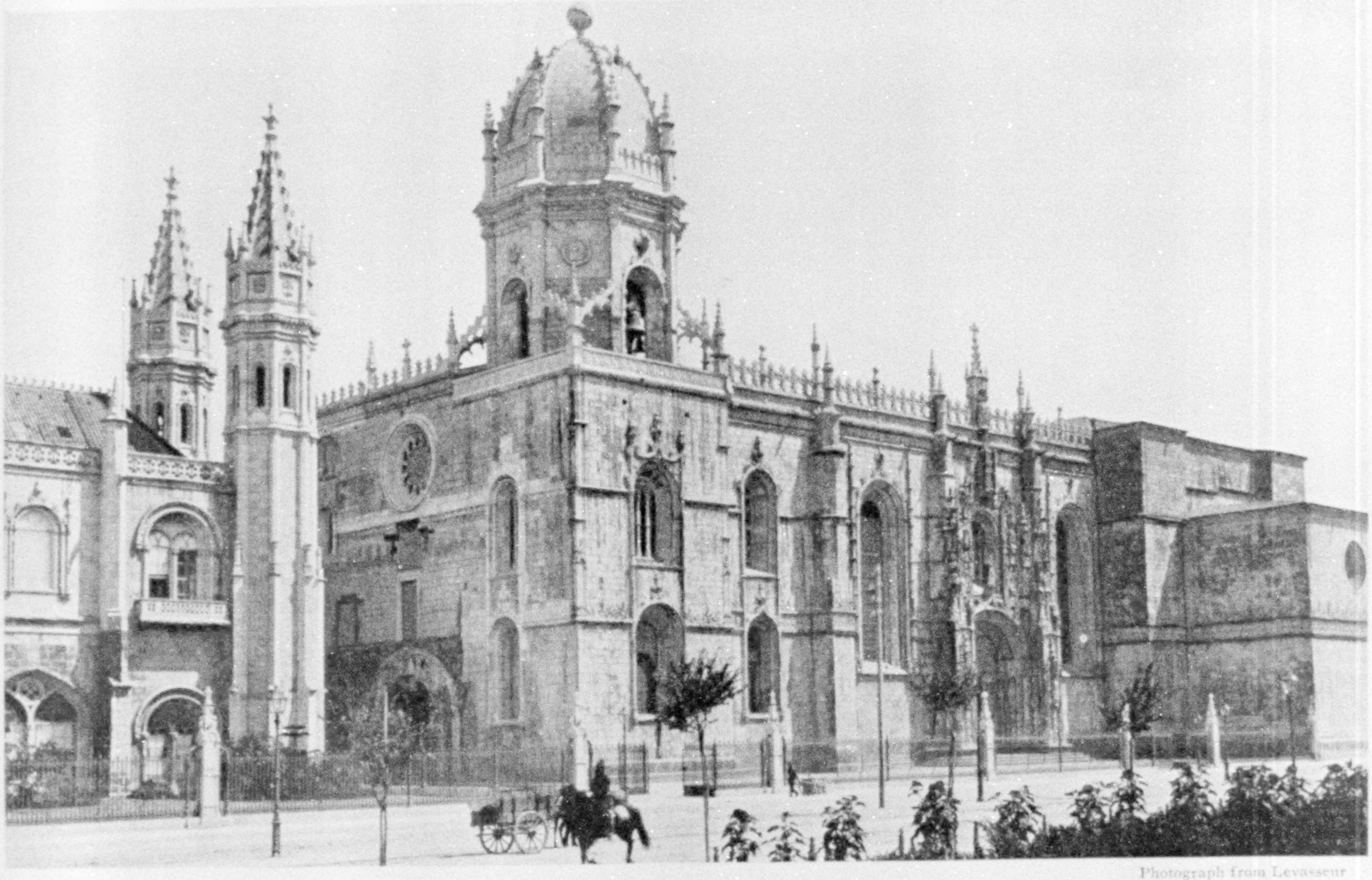
Gama made two other voyages to India; but they belong in the annals of colonization rather than exploration. The second was frankly a voyage of vengeance; the third was one of administrative reform.

Cabral had left forty Portuguese at Calicut, and all of them were murdered by the natives.

"Sire," said Gama to his monarch after Cabral's return, "the King of Calicut arrested me and treated me with great indignity. Because I did not return to avenge myself of that injury, he has again committed a greater one, on which account I feel in my heart a strong desire and inclination to go and make great havoc of him."

A VOYAGE OF VENGEANCE

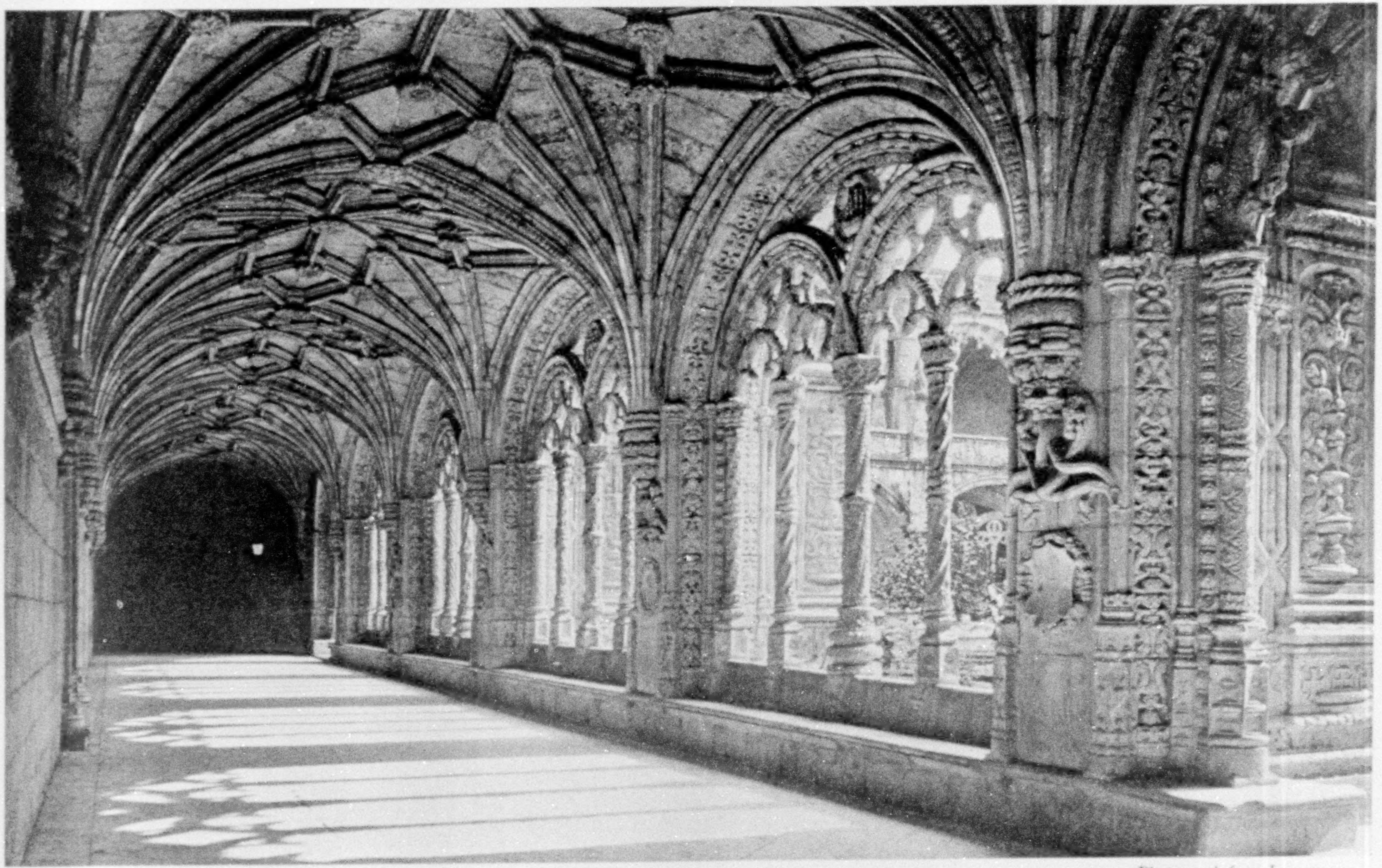
Vasco da Gama needs no whitewashing to make him a hero; but the terrors and tortures of his two later voyages must be considered in the light of these provocations, and of the feeling of the times, that "infidels" were a little less than human,



Photograph from Levasseur

NEAR THIS SPOT GAMA SPENT HIS LAST NIGHT BEFORE SAILING TO FIND THE SEA ROUTE TO INDIA

Long ago, on this site, there stood a seamen's home built by Henry the Navigator. From it Gama started on his voyage of discovery, and there he was received by Manoel I on his return in 1499. The king had vowed to erect here a convent should Gama succeed. Now parts of the institution, known as Convento dos Jeronymos, are used as an orphanage (see, also, illustrations, pages 505, 547, and 549).



Photograph from Levasseur

MOORISH INFLUENCE SHOWS IN PORTUGUESE ARCHITECTURE, AS IN THIS ELABORATE CLOISTER

Manoel I laid the cornerstone of this Convento dos Jeronymos in 1499. At one angle of it stands Santa Maria Church, with the tombs of Gama, Camoëns, and many royal graves. In its unfinished south wing is housed the Portuguese Ethnological Museum.

and of the loss of the kindlier Paulo da Gama.

He started upon his second voyage in 1502. Off Malabar he came upon an Arab dhow carrying pilgrims to Mecca. He set the ship afire and either killed or burned alive everyone on board except 20 children. This seemed a perfectly natural procedure to his contemporaries. One chronicler, who frequently waxes very pious, writes of this incident:

"We took a Mecca ship, on board of which were 380 men and women and children, and we took from it fully 12,000 ducats, with goods worth at least another 10,000. And we burned the ship and all the people on board with gunpowder, on the first day of October."

The commander remarked that "he who spares his enemy dies at his hands," and ordered that the children who were saved be made Christians.

After the ships were set afire some of the Arabs jumped into the sea, and of one of them Correa relates, in his quaint fashion, that "a Moor who was swimming found a lance floating in the water and took it, and raising himself in the water as much as he could, hurled the lance into a boat, and with it transfixed a sailor and killed him; and, as this seemed to me a great thing, I have written it."

"MAKES GREAT HAVOC" AT CALICUT

When the fleet arrived at Calicut the Zamorin sought to placate the Portuguese, but Gama replied that his royal master could fashion a better king than the Zamorin out of a palm tree.

Thereupon he sank the Zamorin's fleet and seized a number of traders and fishermen in the harbor, whose hands and ears and noses he cut off and sent ashore with a message to the Zamorin to make curry of them.

The victims of this cruelty, still writhing in agony, were piled on a raft, with their feet tied together and their teeth knocked out, so they could not undo the ropes. Mats and dried leaves were spread over them and set afire, and this flaming charnel barge was turned adrift toward the shore. The admiral paid his parting respects to the city with a terrific bombardment.

His wrongs avenged, Gama made treaties with Cochin, Cannanor, and other places, set up warehouses and left agents; so that his second voyage marked the beginnings of the rich, regular trade for which he had blazed the way.

AN EARLY "BIG NAVY" ADVOCATE

In 1505 Francisco de Almeida was dispatched as the first Viceroy of India. That great admiral saw at once that the vast extent of Gama's discoveries constituted a weakness. He urged his king to annex no possessions, and to build no fortifications except to protect trading posts, and advised that the navy be developed to the utmost to protect the extensive new trade.

After Almeida's gallant battles with the strangely matched fleets of Egypt and Islam made the sea safer for Europeans, Affonso d'Alboquerque went out to plant his country's flag in such strategic spots as Goa, Malacca, Ormuz, and Aden. Hitherto Portugal had not claimed a square foot of the territories Gama had discovered.

During the siege of Goa, Alboquerque's ships were caught in a dead calm, and he could neither attack nor retreat to replenish his supplies. Food ran short or went sour in the blistering heat. The Shah of Goa, suspecting this condition, sent out a boatload of supplies under a flag of truce; whereupon Alboquerque staged a phantom banquet. The spies saw Portuguese lolling about tables laden with choicest foods, apparently surfeited by a heavy meal.

These viands were about all the food on board. They had been hoarded for the sick, and after the spies' departure they were gathered up intact, before the yearning eyes and watering mouths of the half-starved crew, to be conserved for the direst emergency.

Alboquerque's career abounds in bizarre and heroic deeds, but his fame rests upon a generalship and statesmanship that made Portugal's East Indian empire real and secure.

However, his administration had the vulnerable point of all dictatorships—the great Alboquerque left no successor. For ten years after his death, in 1515, India suffered from graft, misrule, and predatory fortune hunters. King Manoel had died. After his second voyage Dom

Photograph by L. Rafael Bordalo Pinheiro

PORTUGAL HONORS THE GREAT MEN WHO MADE HER HISTORY

In all the annals of once powerful Portugal, no other name is above that of Vasco da Gama. Beside him now lies Luis Vas de Camoëns, that great poet whose verse immortalizes the voyages of Gama. Here, too, in the Convente dos Jeronymos, at Lisbon, is the tomb of Catherine of Braganza, wife of Charles II of England.

Vasco da Gama had married and stayed home to enjoy his estates and fortunes.

King John III called India's pathfinder from his 21 years' retirement to reëstablish Portuguese power in its overseas dominions.

It was a white-bearded, irascible, fat old man who marched pompously down to his fourteen ships one crisp day of April, 1524.

He seemed more a Sybarite than a sailor. A corps of men bearing silver maces was assigned to serve him; his retinue included a major-domo, pages wearing golden necklaces, and an array of equerries and body servants.

"They brought to him at table large dishes, as if to the King," so Correa proudly relates, "with his napkin-bearers bringing him the ewer, and all the forms of precedence of a king."

Out of sight of land he quickly proved himself the fiery, dictatorial leader of a quarter of a century past. One day while his ships were becalmed they suddenly began to toss about and his crew became terror-stricken.

The figure who had quelled mutiny in perilous storms arose to proclaim, "Have courage! The very sea trembles at us. This is an earthquake!"

At Calicut he arrested the Portuguese

governor for irregularities in his accounts, and that official's influential brother besought clemency, pointing out that the accused had not sold any of the king's forts, as others had done. The viceroy retorted, "Sir, if your brother had sold fortresses, he would not have his head where it is now, for I should have ordered it cut off."

He dealt out harsh and wholesale penalties to all offenders. When some implored for Christian mercy, he gruffly replied that if the miscreants were guiltless and Christians, doubtless they would receive Christian mercy in the world to come. "Never," he added, "shall they meet with anything from me except all severity and punishment."

At various ports he amazed everyone by refusing presents from Arab, Hindu, or Portuguese. Many men had come to India to make their own fortunes, he explained, but he had come to make his king's fortune.

He introduced a crude civil service system and personally examined the handwriting of applicants for clerical posts. He registered all the government's overseas employees. He stopped the adulteration of spices with sand and grit. He licensed navigators; he abolished pay and rations which had been distributed among colonists for no other reason than that they had married native women; he prescribed a shore uniform for sailors, and he gathered in many pieces of stolen artillery. In modern police parlance, he "cleaned up" India.

Then he cast about for a means of patrolling the rivers and shores, which were infested by the swift pirate craft of the Arabs. A Genoa boat builder he brought along promised him, "Sir, I will build you brigantines which would catch a mosquito."

A MALABAR "REVENUE CUTTER"

In 20 days the builder had ready two rowboats, fashioned after Levantine models, which were manned in the following manner:

"Each of the rowers had under his bench a breastplate and helmet of steel, and a lance and shield, and two pots of powder; because, on seeing the prize, they armed themselves, and put on the helmets, which glittered afar off, and on coming up with the prize they let go the oars, and took their spears and bucklers and powder pots, which they cast on coming alongside, and there remained 30 armed men, who fought and could do much; so nothing escaped them either with oars, or sail, or fighting."

Vasco da Gama's death was not dramatic, like that of Diaz, who was lost in a storm at sea, or like that of Almeida, who was slain by Hottentots. He succumbed, on Christmas Eve of 1524, at Cochin, to an attack of boils on his neck.

But Gama's death, like Lincoln's, was timed at the climax of his career.

His first voyage marked out the path to India, his second put fear into the hearts of the natives, his third exhibited a loyalty and honesty which were marvels of his time.

A TOMB AND A POEM

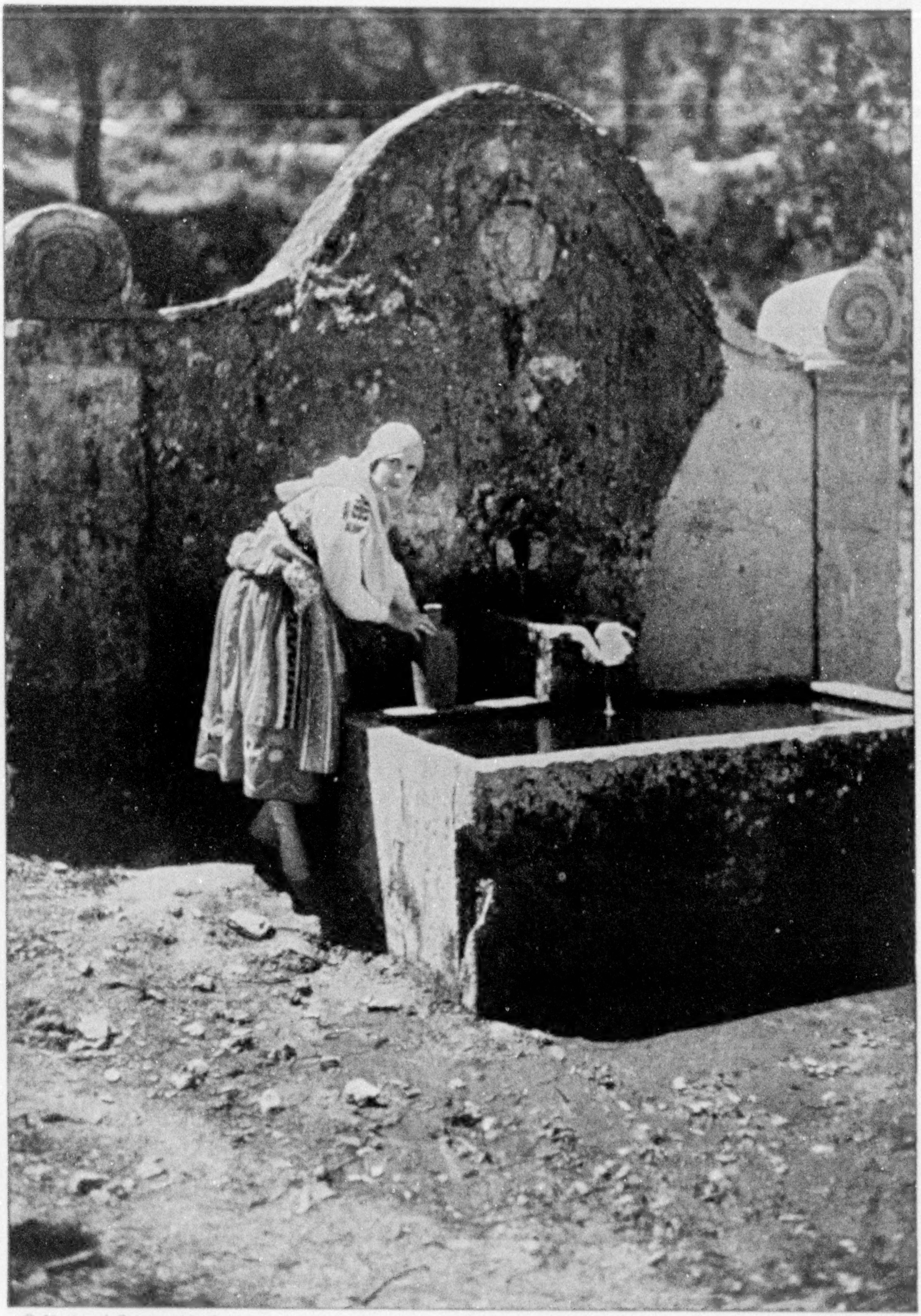
Had he gone back to Portugal he might have been discredited by his enemies, as was Alboquerque. Instead, he was buried at Cochin, and when his remains, some years later, were transferred to Portugal, he was acclaimed a national hero.

To-day his supposed remains appropriately rest at Belem beside those of the poet Camoëns, in one of the world's most beautiful tombs, the Convento dos Jeronymos, the Westminster Abbey of Portugal.

It is to be regretted that there is no first-hand narrative of Gama's voyages. Neither Columbus nor Cook, however, had a Camoëns, such as the one-eyed soldier-poet who wrote the epic of Gama's voyages, known as "The Lusiad" (see, also, text, page 531).

Half of that latter-day Iliad was composed at Macao, Portuguese China, and tradition has it that Camoëns was shipwrecked on his way home to Lisbon and swam ashore clutching some five or six dripping cantos.

This masterpiece of Camoëns, one of the world's greatest epic poems, is the finest monument to Vasco da Gama's genius; and a fuller realization of the effects of his voyages has added historical confirmation to the poet's intuitive perception of his mighty achievement.



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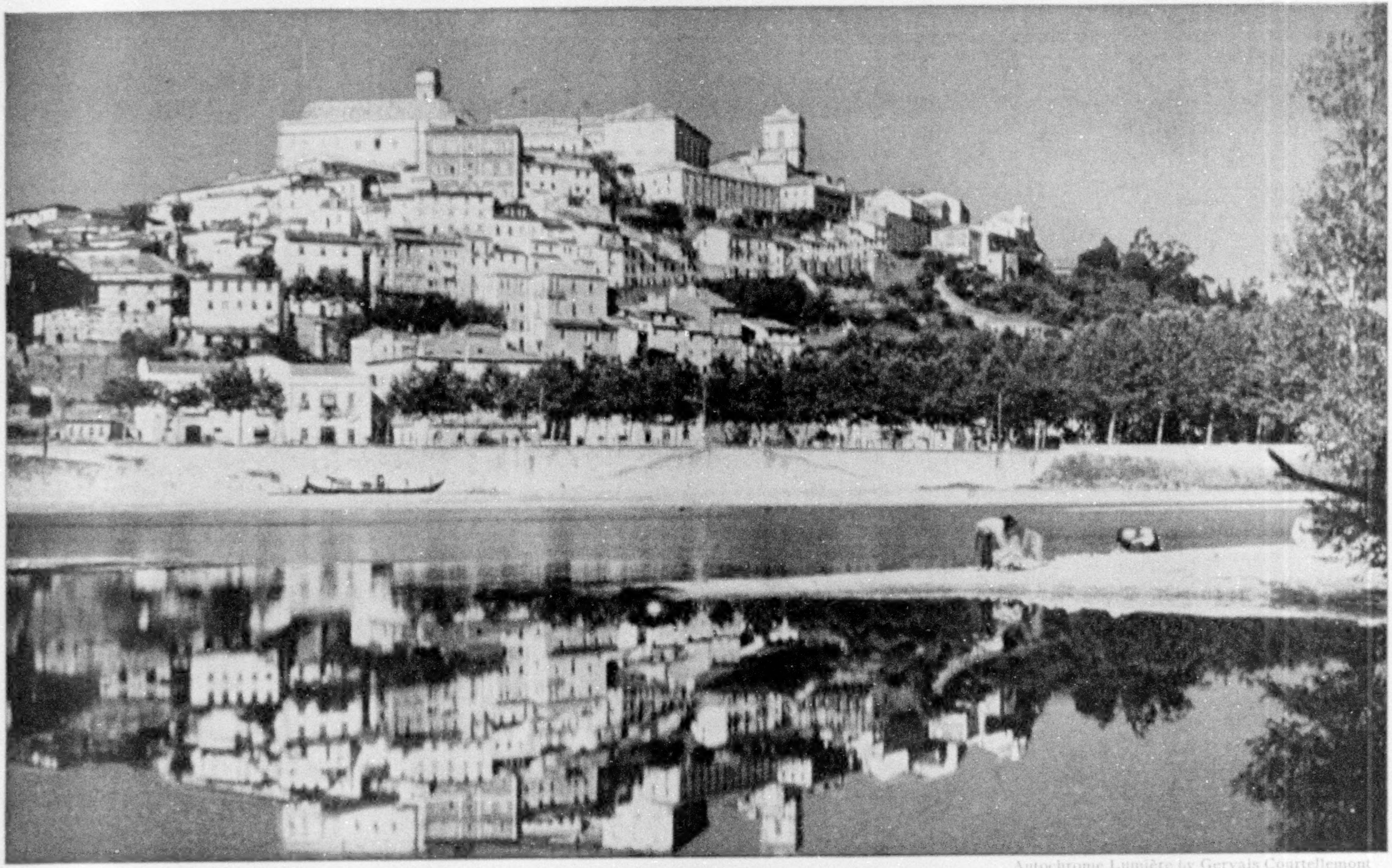
A PORTUGUESE REBECCA

This old fountain at Vianna do Castello was built by Romans when they ruled Portugal and called the land "Lusitania." By this means they piped pure water to many villages, and to this day "early Roman plumbing" is all these villages know.



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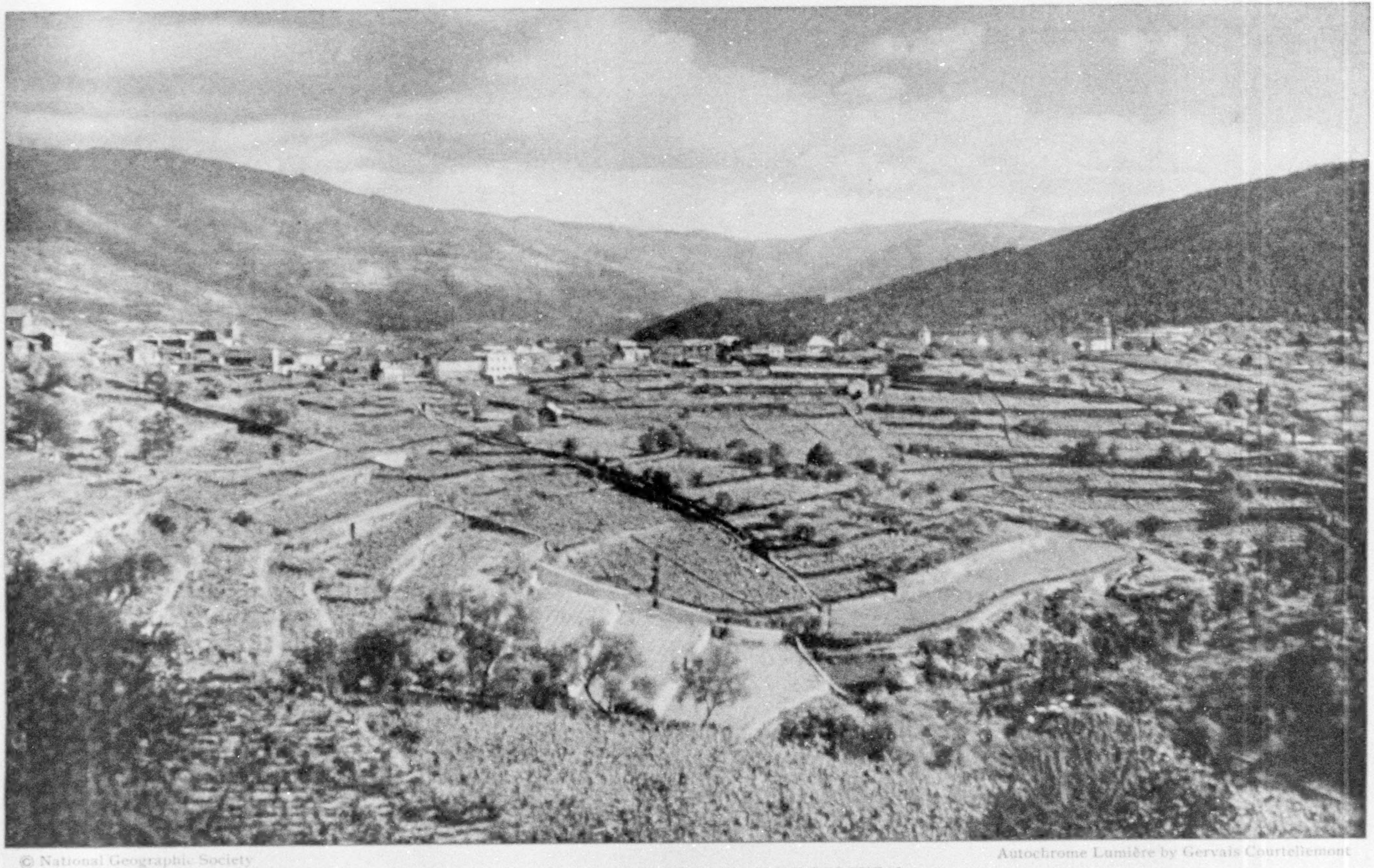
ANCIENT COIMBRA, THE ATHENS OF PORTUGAL, MIRRORED IN THE MONDEGO

On this Lhasalike hill stands Portugal's only university—now 636 years old. Wrested from the Moors in 1064 by Ferdinand I and the Cid, Coimbra was long capital of the kingdom. Here six kings were born. Through the years, this old seat of learning has known the rebel and the radical, the sage and the student.



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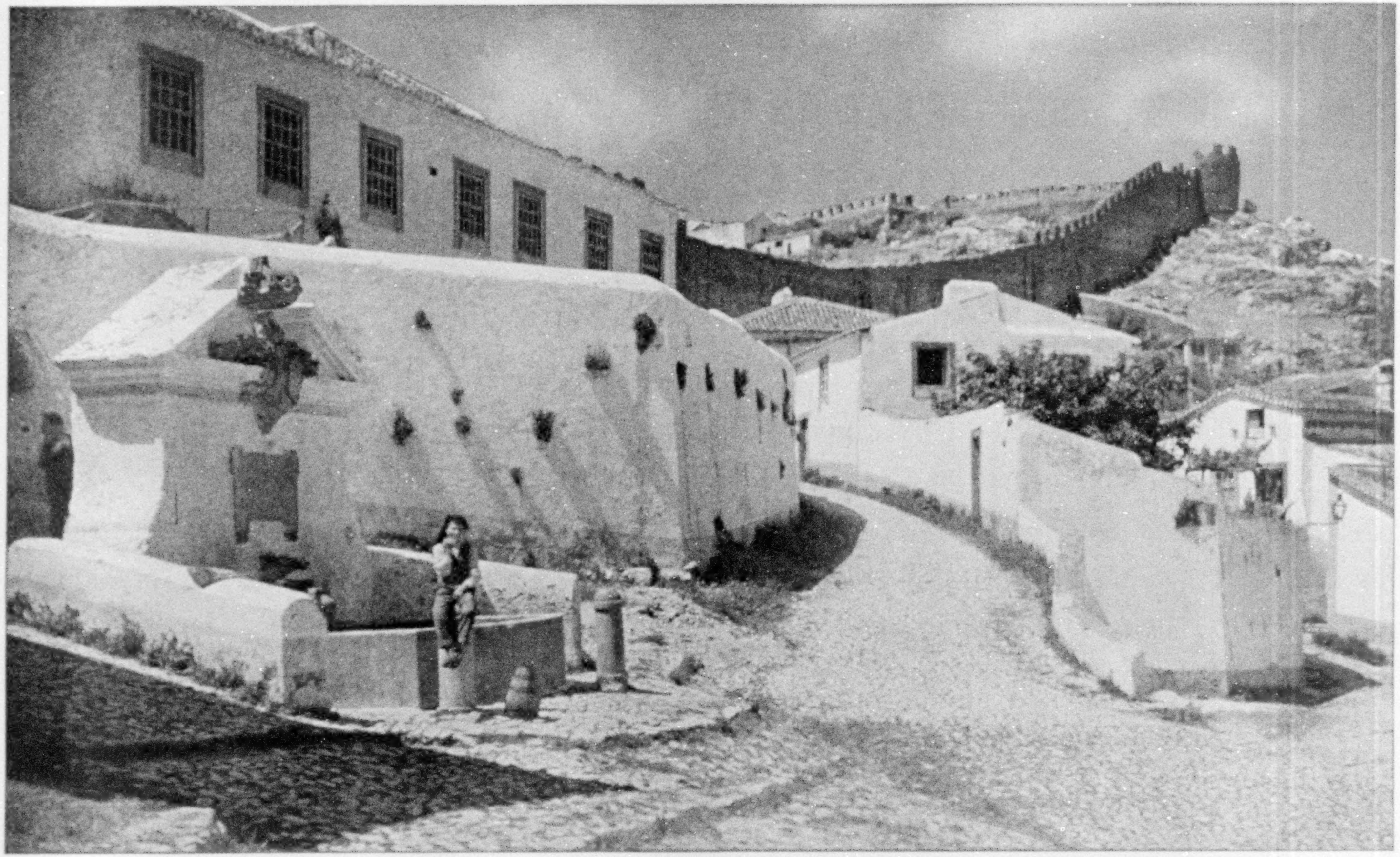
FROM OPORTO COMES THE PORT OF PORTUGAL

Like the Igorot rice-fields of Luzon, these terraced vineyards climb the hillsides of the Douro River country. Here, for generations, English wine merchants have lived and thrived on the stream of port that flows to the British Isles.



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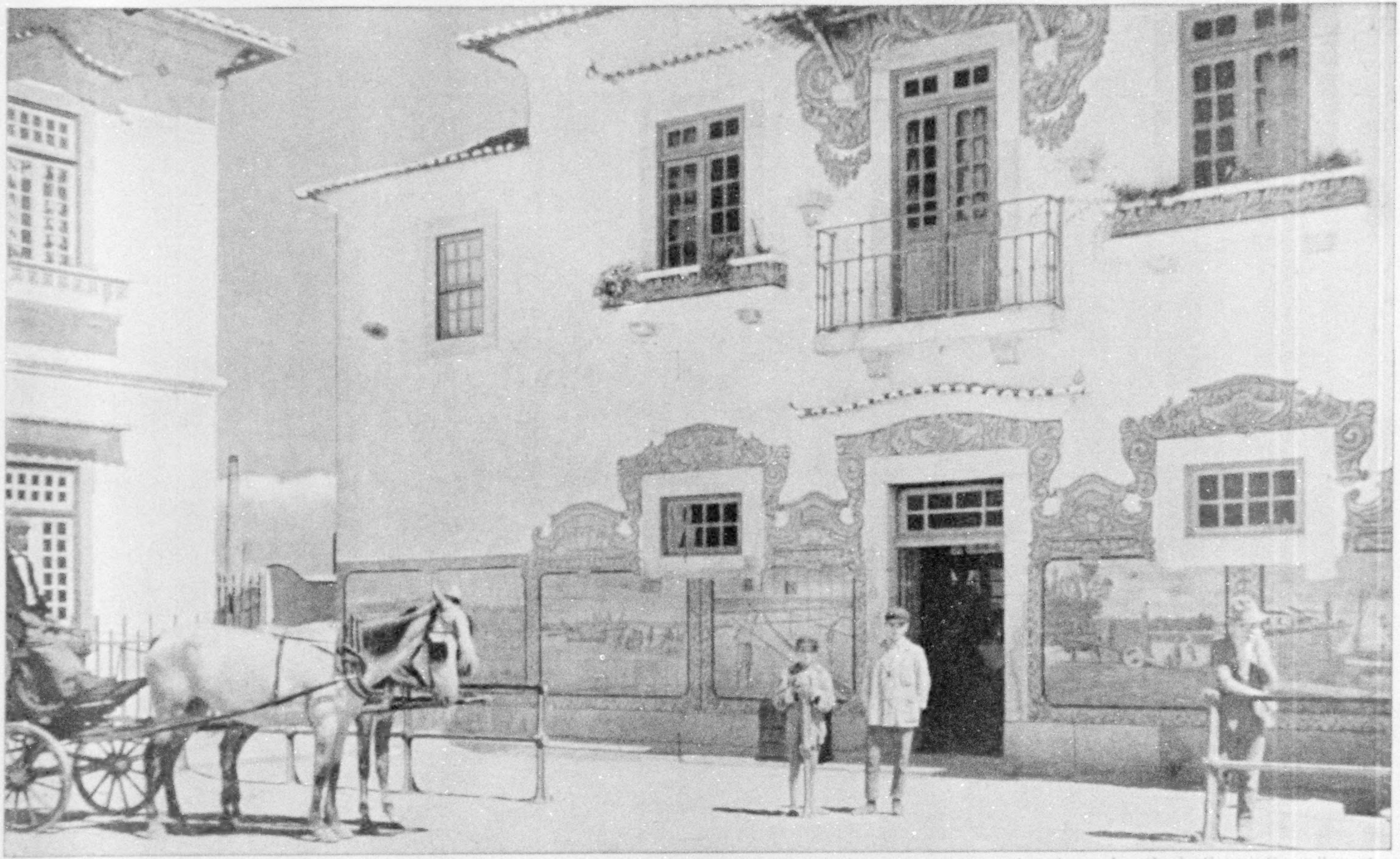
THE MOORS WERE MASTER MASONS

Seven hundred and seventy-nine years ago Moors laid the brick in this fortified enclosure. Beside modern masonry, it looks like a queer blend of French pastry and Mexican prison walls. Yet, actually, it is a fine specimen of a Middle Age fortified village on the road to Castle Obidos, built in 1148.



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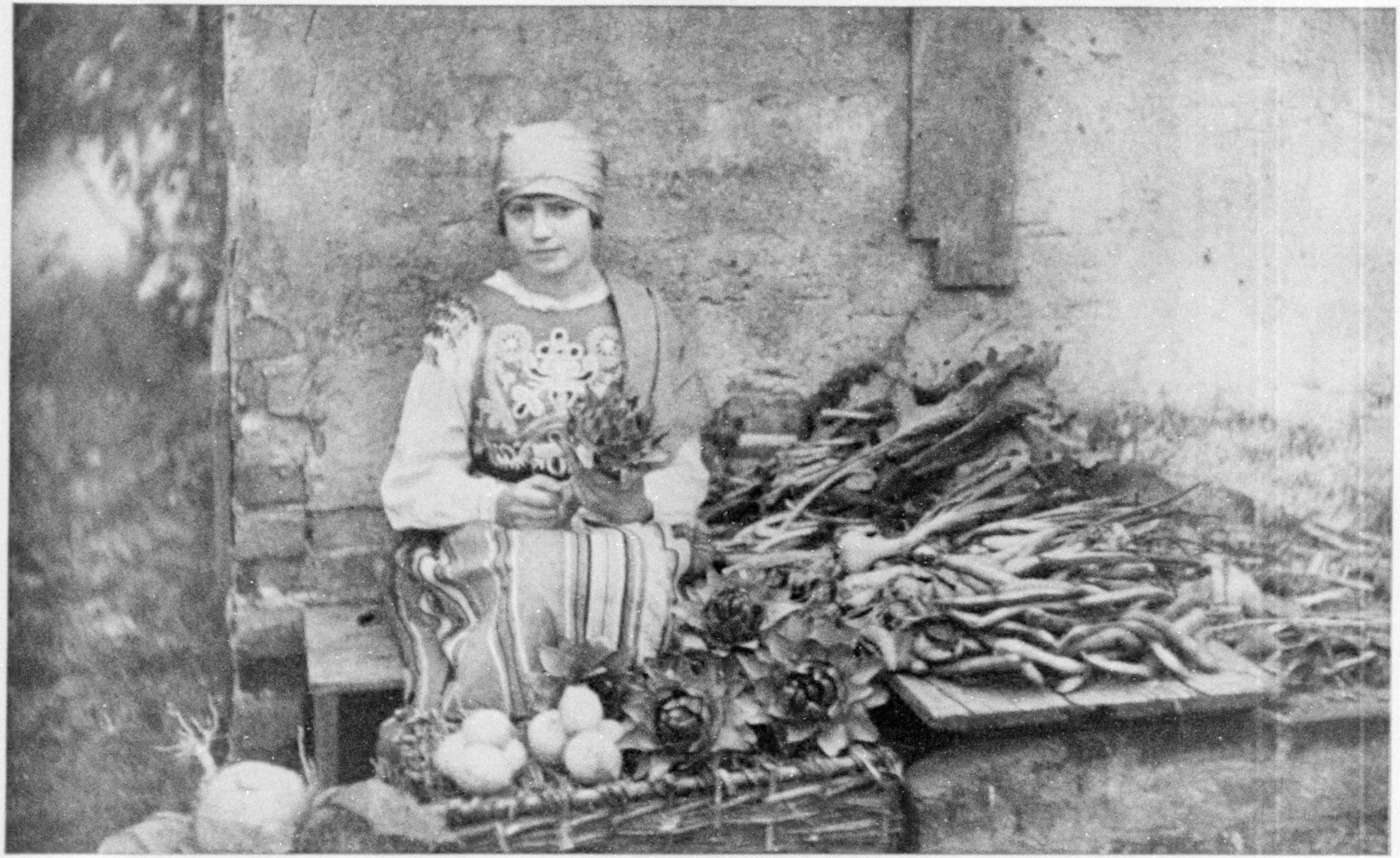
NOT A CINEMA THEATER BUT THE RAILWAY STATION AT AVEIRO

On its façade, ornamentally done in bright-blue tiles, is a series of panels which picture the farming, fishing and other industries of the Republic. Out from Aveiro, for 500 years, men have gone in quest of sardines, whose export is still a brisk local industry (see also Color Plate XV).



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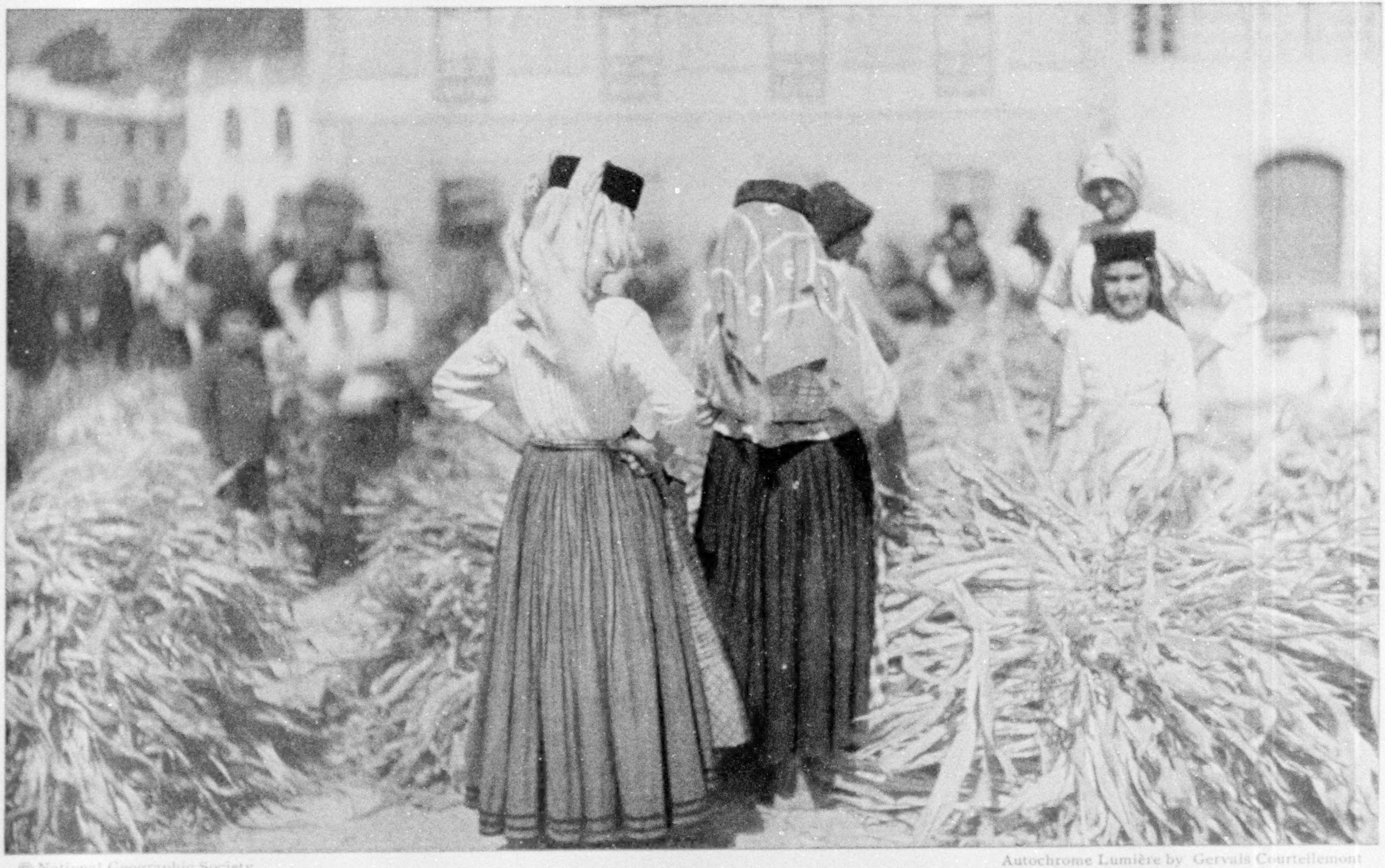
THIS CABBAGE QUEEN DESERVES MORE CUSTOMERS

Whether one knows beans, or likes onions, there's nothing wrong in this picture. If a pleasing personality helps to sell goods in Portugal, this vegetable *vendeira* should soon become a merchant princess.



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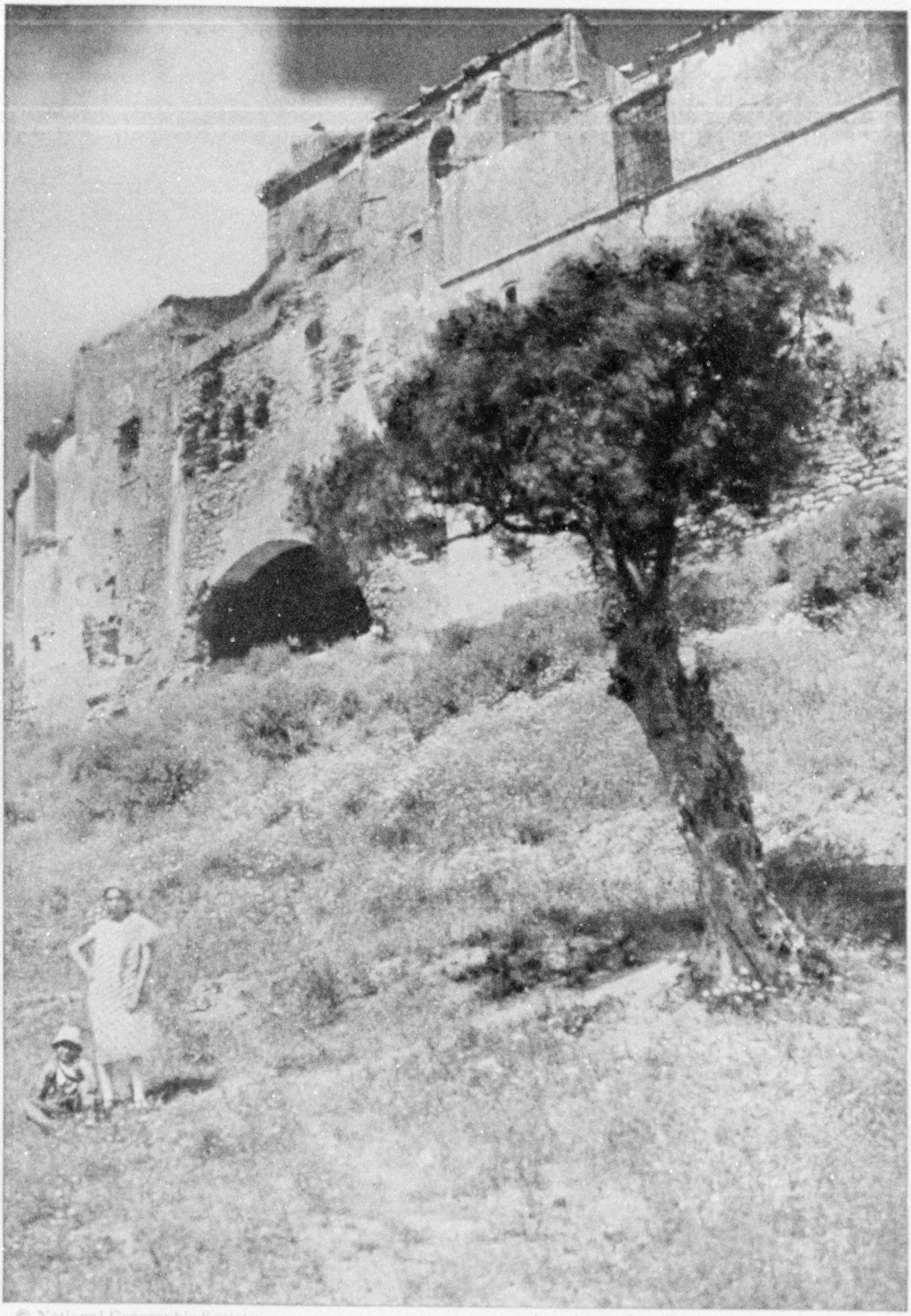
MOORS BROUGHT THIS PECULIAR HEADGEAR TO PORTUGAL

Bedouins wear this same headdress, flapping about the neck, to protect against sun and sand. Originally, the caplike top piece of this Arab garb was worn to ward off sword blows. These peasants are selling fodder in the streets of Leiria, west-central Portugal, near the coast.



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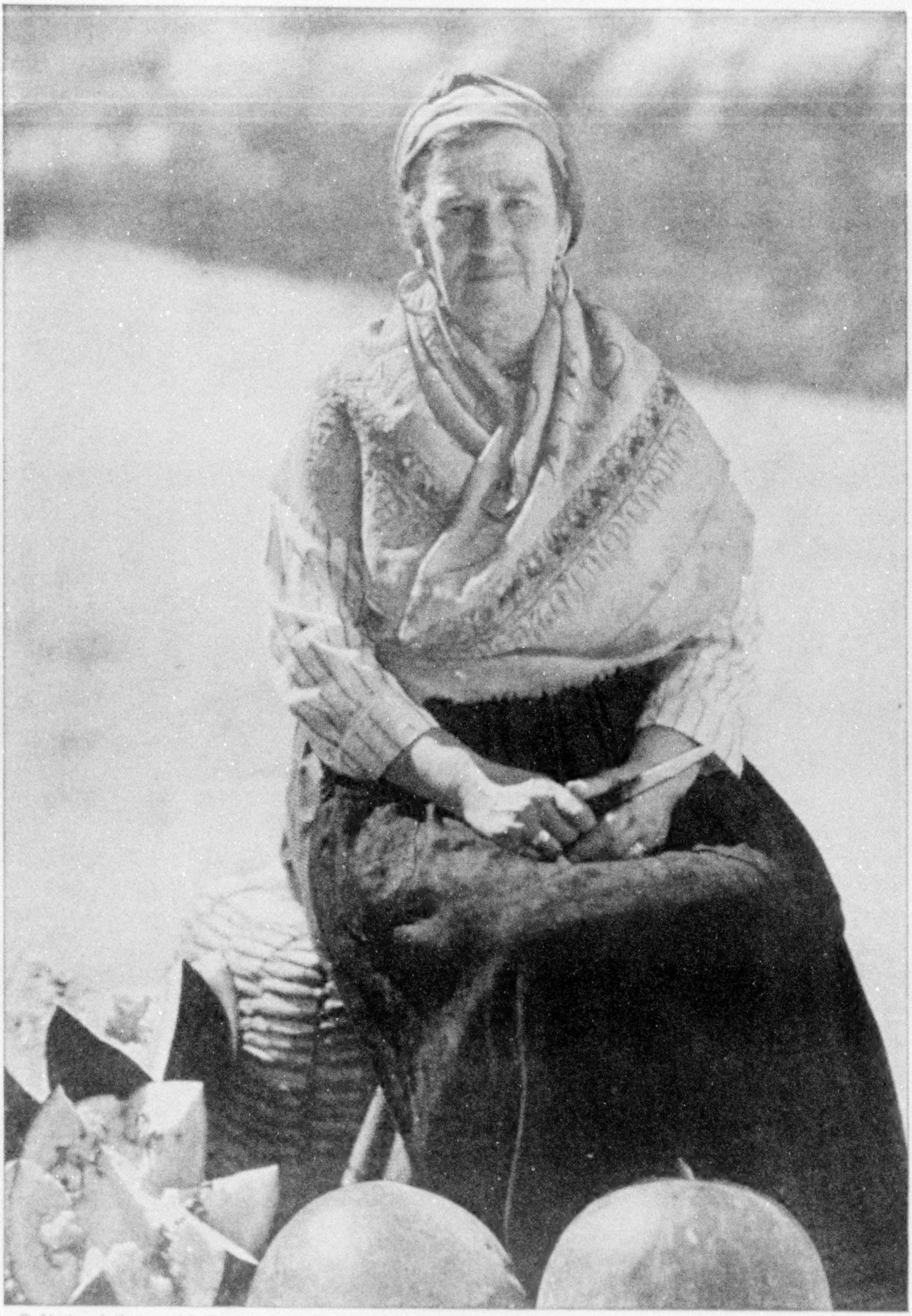
ONCE THE HOME OF SOME MOORISH SHEIK

What a fancy rent this structure would bring, could it be towed out to Hollywood, for the use of movie-makers! In old days, when Cross and Crescent clashed in Portugal, castle building was a busy industry. Now the people cut cork and catch sardines.



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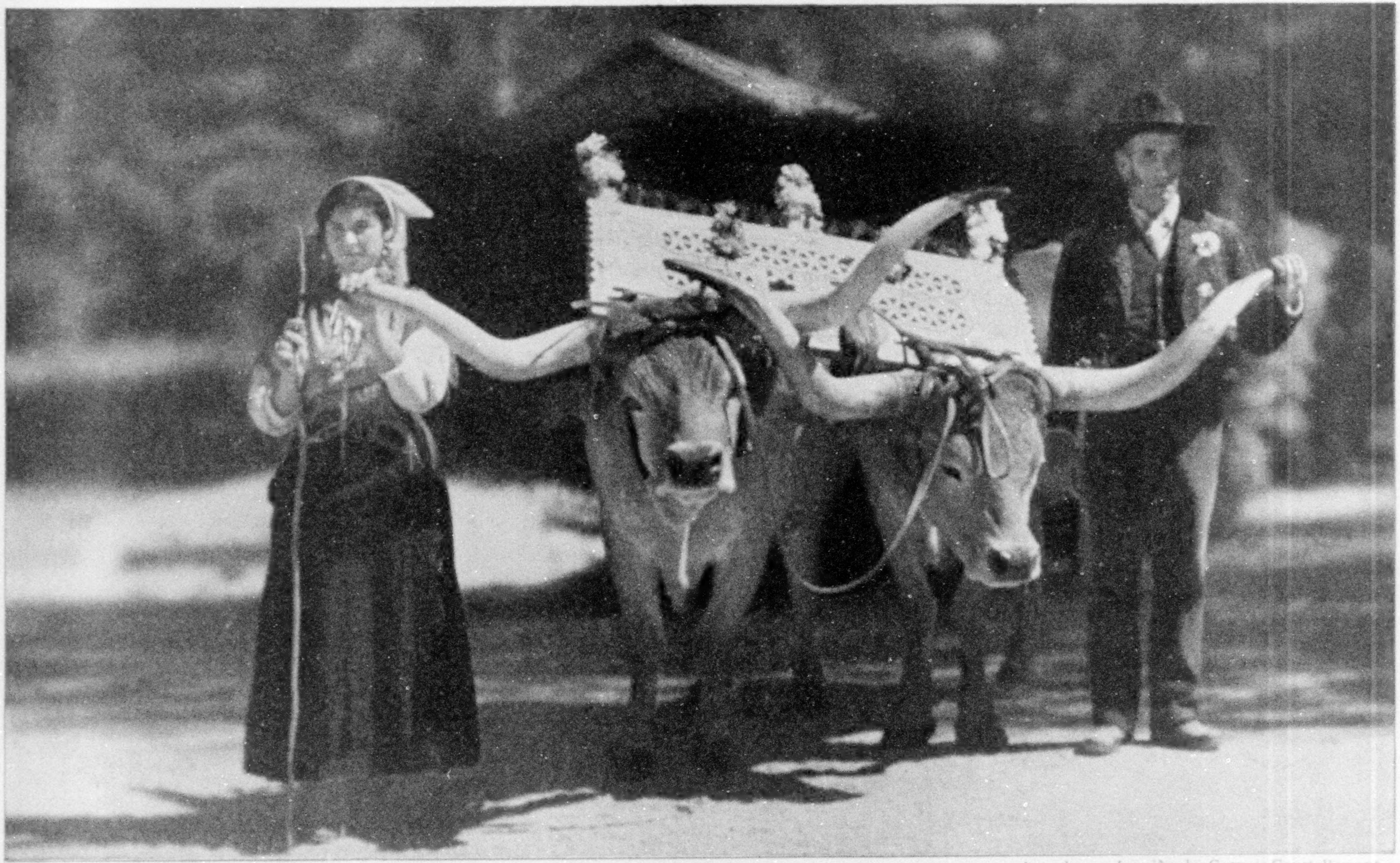
MELON CUTTING IN PORTUGAL

From such mothers came those bold men who once made Portugal mistress of the seas. Then her power passed, and glory faded. To-day the roaming "Portygee" of the peasant class, scattered over the world, toils at tasks unthought of in the glittering age of Vasco da Gama.



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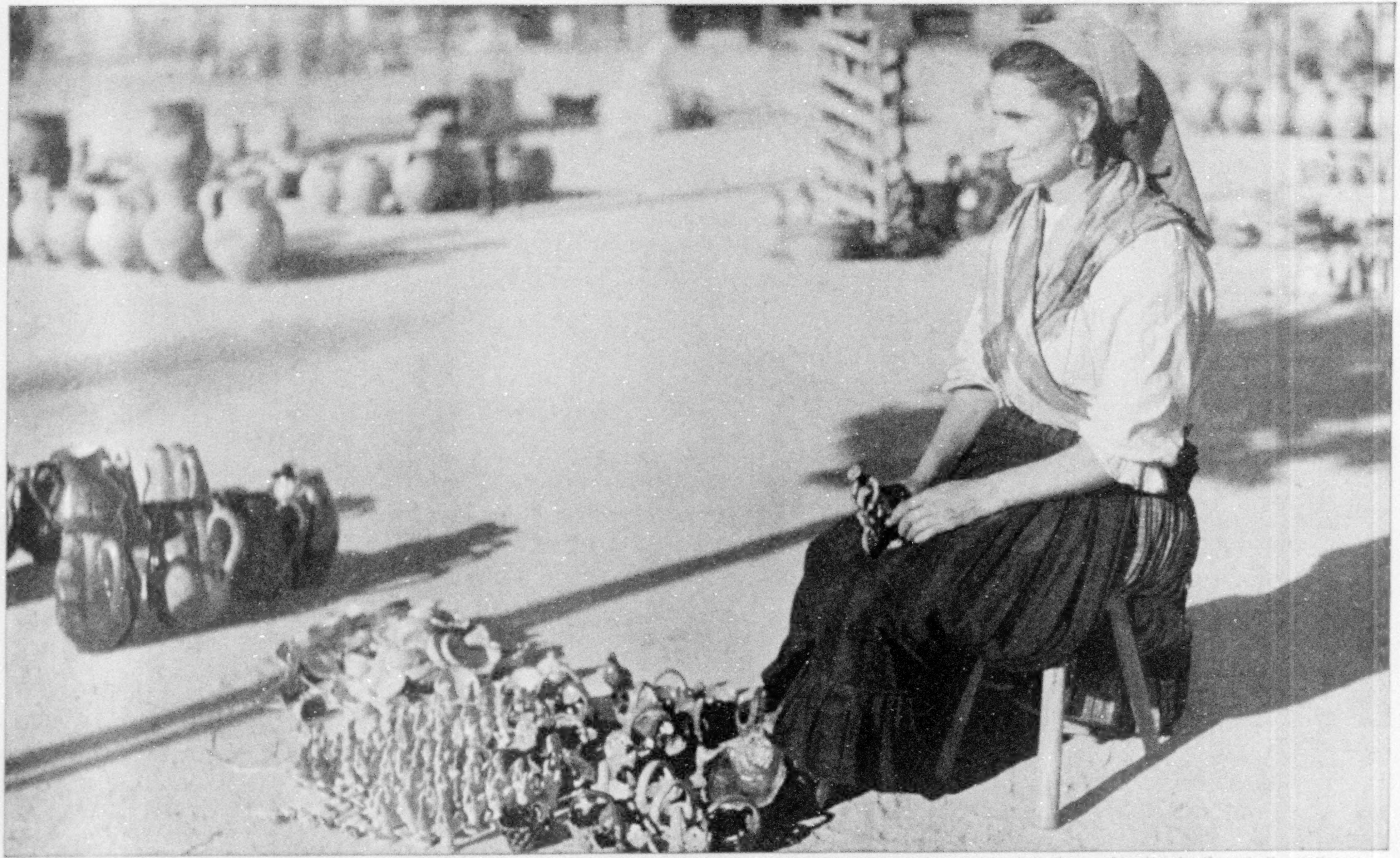
COUSINS OF THE TEXAS LONGHORN

These ocher-tinted oxen, with their "open-work" yokes of punch-board design, are the burden beasts of north Portugal. Their yokes are made of olive wood and the crude carts they pull are of the same type used here long ago by Roman conquerors.



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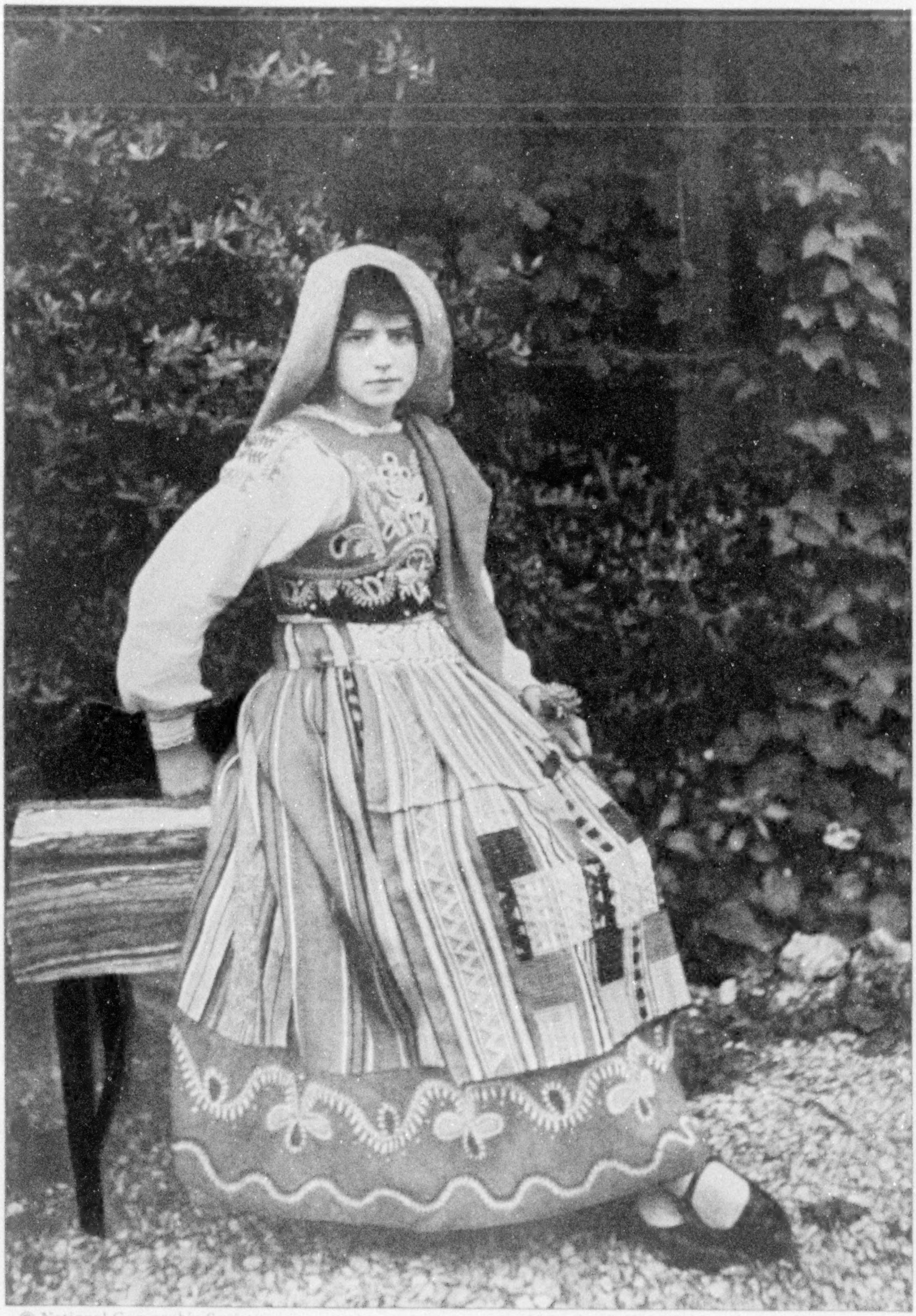
PORTUGUESE CHILDREN PRIZE THESE PAINTED DOLLS OF BAKED CLAY

Water jars, clay whistles, vases and toys, made of clay and brightly decorated, are sold in all Portuguese markets. Here, as in the Orient, street merchants spread their wares on the ground, each in his own favorite spot. They pay no rent, nor do they solicit any sales. You can look and buy, or simply look. It seems all the same to the daydreaming dealers.



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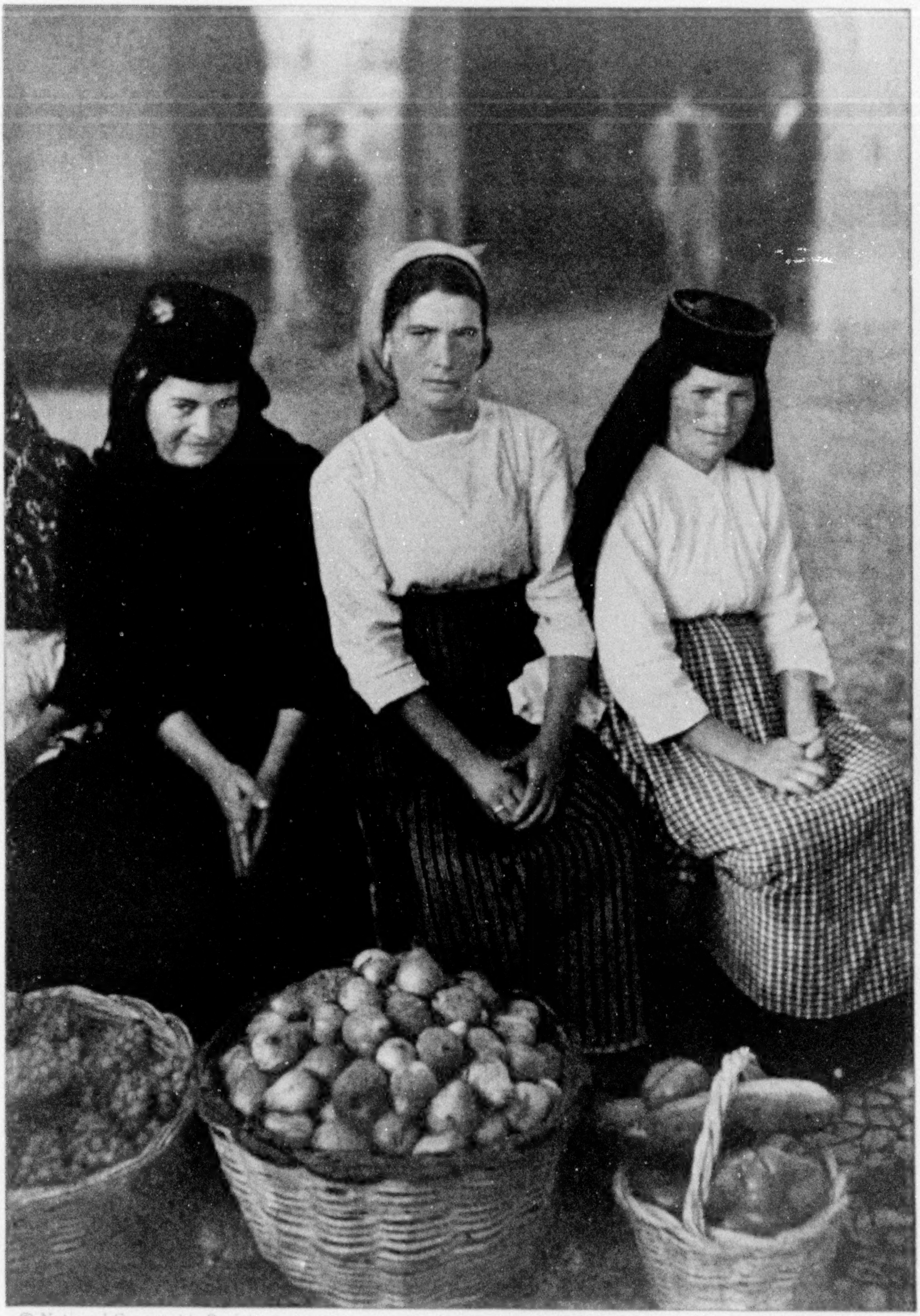
A PORTUGUESE RAINBOW

On her waist, she has proudly embroidered the word Vianna, the name of her home town (see also Color Plate I). Changing fashions of Paris, New York or London have no effect on these peasant costumes, which are the same now as long ago, eye-filling and picturesque.



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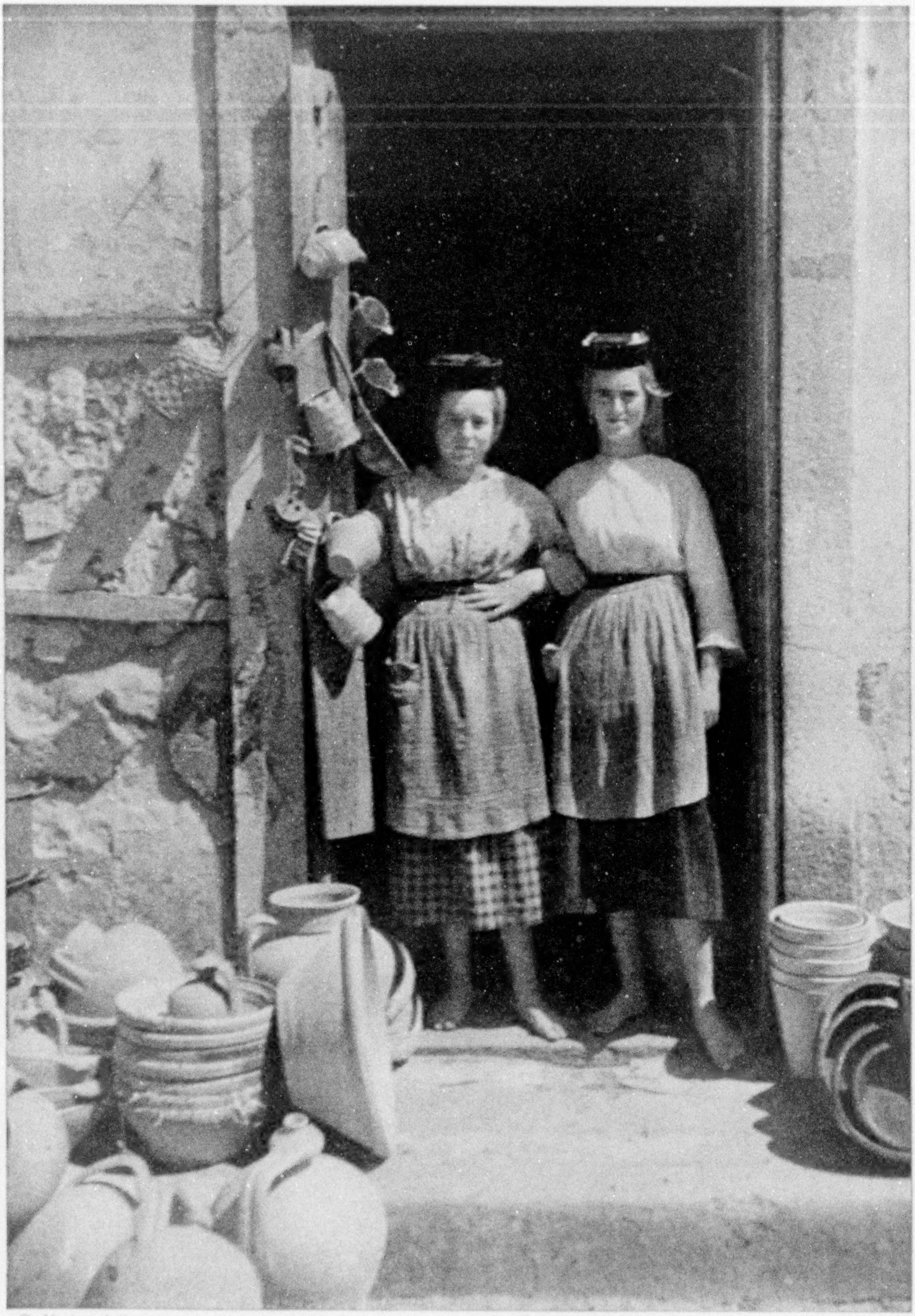
WHY PORTUGAL NEEDS NO WHEELBARROWS

The middle woman, stiff-necked and straight-backed, carried her pears miles to market, balanced on her head. The one on the left, camera-shy and diffident, brought the grapes. All over Portugal goods are delivered in this oriental way.



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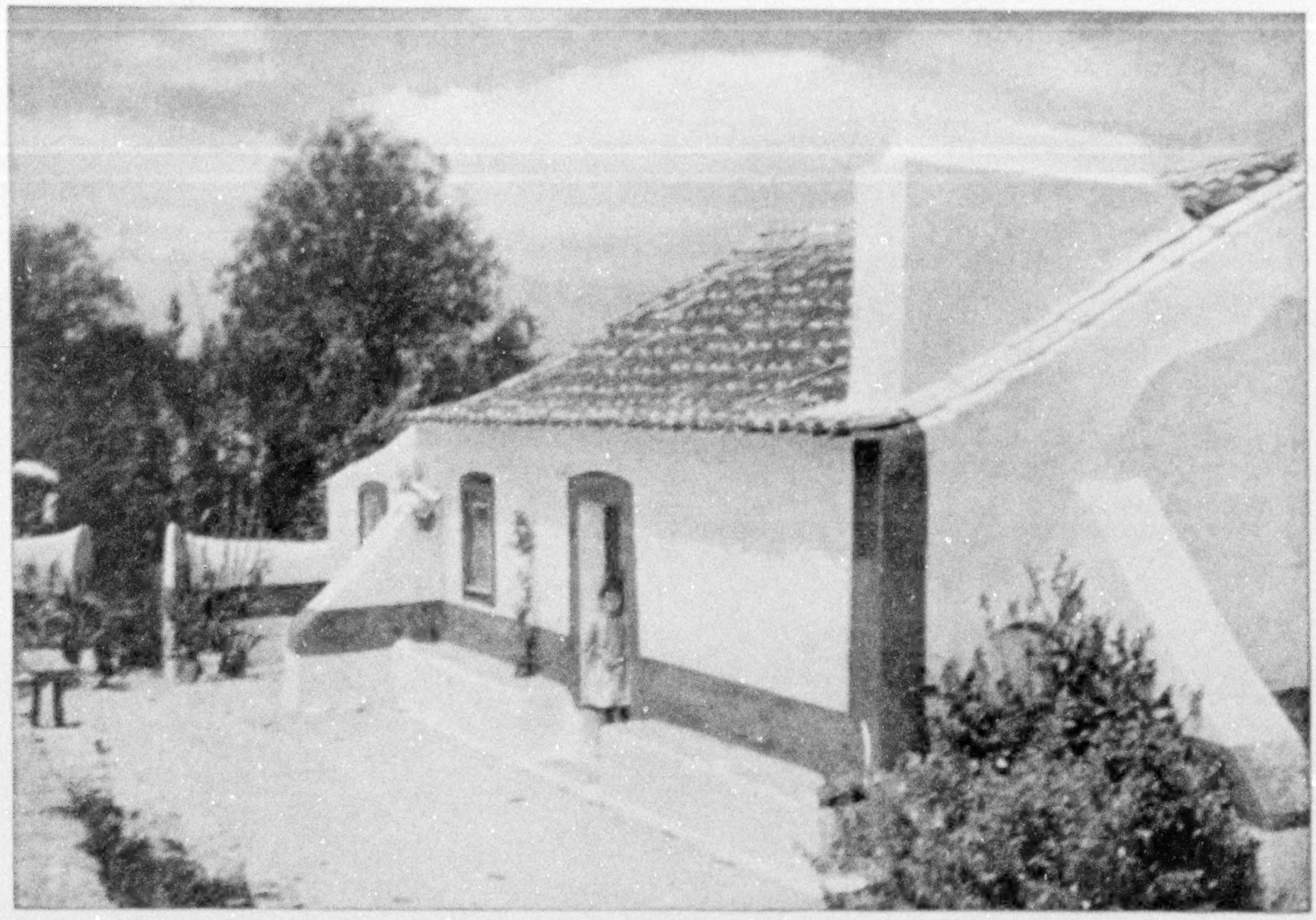
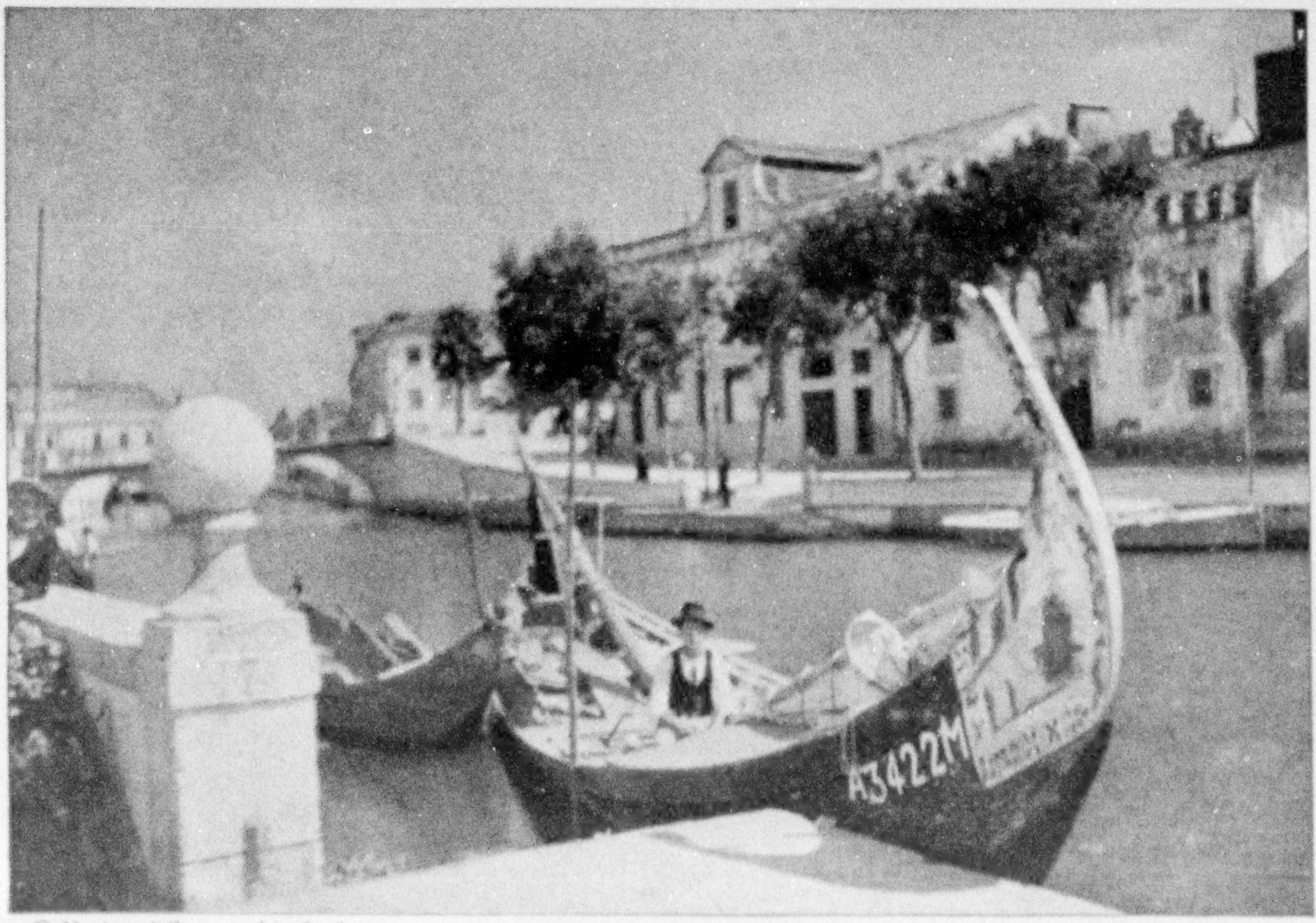
A SISTER ACT ON LIFE'S STAGE

This small shop near Alcobaça, like others in Portugal, has no windows. Light and air come only through the door. This is an oriental idea of architecture which is a relic of Moslem times.



A COZY EARTHQUAKE-PROOF HOME IN SOUTH PORTUGAL

To guard against earth tremors houses here are built with thick, buttressed walls.



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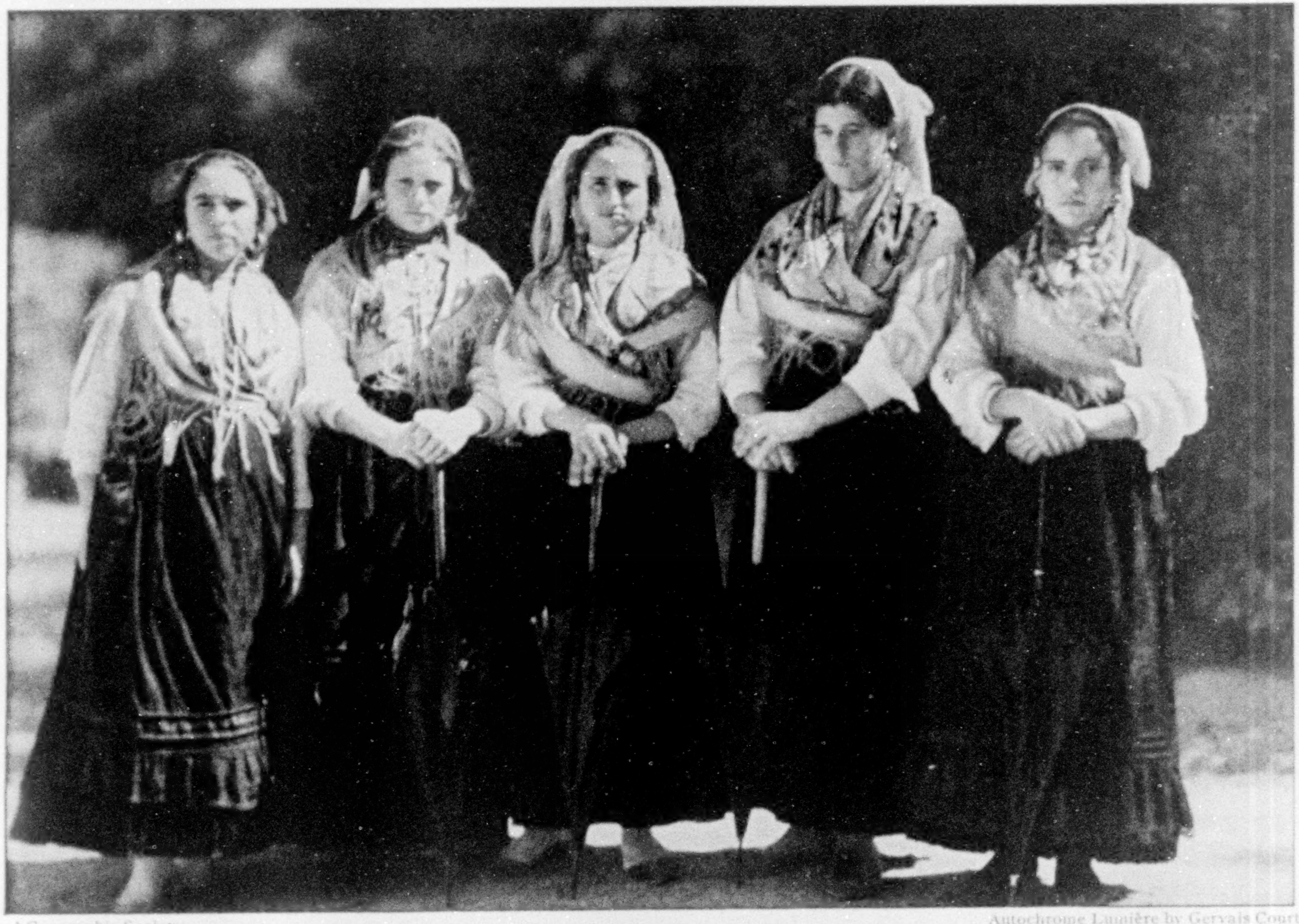
Autochromes Lumière by Gervais Courtellemont

AN AVEIRO BOAT WITH A PICTURE ON ITS NOSE

This smart-looking pleasure craft is anchored at the old Aveiro quay in north-central Portugal. Many of these high-prowed, Norse-looking boats ply the canals of the marshy, rice-growing region between Oporto and Coimbra.



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MAIDS OF MINHO PROVINCE

Barefooted, these women work afield all week. But when Sunday comes, or a feast day, they squeeze their broad feet into wooden-soled shoes and limp happily away to mass or fiesta. Here, style calls for more and longer petticoats.

AN ALTITUDINAL JOURNEY THROUGH PORTUGAL

Rugged Scenic Beauty, Colorful Costumes, and Ancient Castles Abound in Tiny Nation That Once Ruled a Vast Empire

By Harriet Chalmers Adams

Author of "A Longitudinal Journey Through Chile," "Adventurous Sons of Cádiz," "Across French and Spanish Morocco," etc., etc., in the National Geographic Magazine

"I'VE never been in Portugal," said the man with national prejudices, "but I'm sure it isn't worth visiting—little country; small, dark, lazy people; revolutions."

I have twice journeyed through Portugal and am fascinated by its marked scenic beauty, unique architecture, ancient survivals in costumes and customs, to say nothing of its glorious historical associations. It has a sturdy, industrious peasantry. Many of its northerners are fair and blue-eyed.

Last summer we waited a week in the Spanish seaport of Vigo for the current Portuguese rebellion to calm down, before heading south. We were entering on a longitudinal and an altitudinal journey through Portugal. From the summits of wooded hills back from the coast we were to look down on the Lusitanian lowlands, on limpid streams winding through emerald valleys, on flower-spangled meadows reaching down to pine-fringed shores.

Noble Iberian rivers flow westward to the Atlantic. There is one which the Spaniards call the "Miño," the Portuguese, the "Minho." The international bridge which spans it unites green Galicia, in northwest Spain, with northernmost Portugal. On the Spanish side of the river lies the gray fortress-town of Tuy, frowning across upon its Portuguese neighbor, Valença do Minho, whose crumbling battlements crown the hill.

We slip across the bridge by train, or automobile, in these prosaic days; but Tuy and Valença belong to a turbulent age of border warfare, of hard, valiant men, of blades dripping blood.*

Leaving Vigo at noon, the traveler can reach Oporto, Portugal's second largest city, at 6 the same evening; but it is well to break the journey at Valença, Vianna do Castello, Braga, and Guimarães, four interesting, historic towns.

A MEDIEVAL MILITARY POST AT VALENÇA

Although the need of frontier garrisons is past, Valença still is a military post. Medieval in aspect, hidden behind great ramparts, the old warrior town surmounts a hill high above the Minho. Over the moat, through the tunnel, and up the narrow, winding streets our automobile "honked," warning swarms of children, cats, and chickens to run to safety.

Valença's architecture differs from that of Spanish Tuy, across the way. Portuguese houses run to granite, painted white, with trimmings in the natural hue; to blue and white glazed wall tiles, the manufacture of which is a national industry inherited from the Moors (see, also, Color Plates V and XV).

Leaving the automobile for the railway, we found the coaches on local trains not always so clean and comfortable as those in Spain; the customs and train guards less neatly garbed; the paper currency, in exchanging our Spanish *pesetas* for Portuguese *escudos*, more ragged. But these were minor details. The people were hospitable and courteous. The customs guard even put on clean, white cotton gloves before examining our luggage!

"The garden of Portugal," as the Portuguese call their lovely ever-green northern country, is nearly as rich in flowers as California.* Even the railway stations

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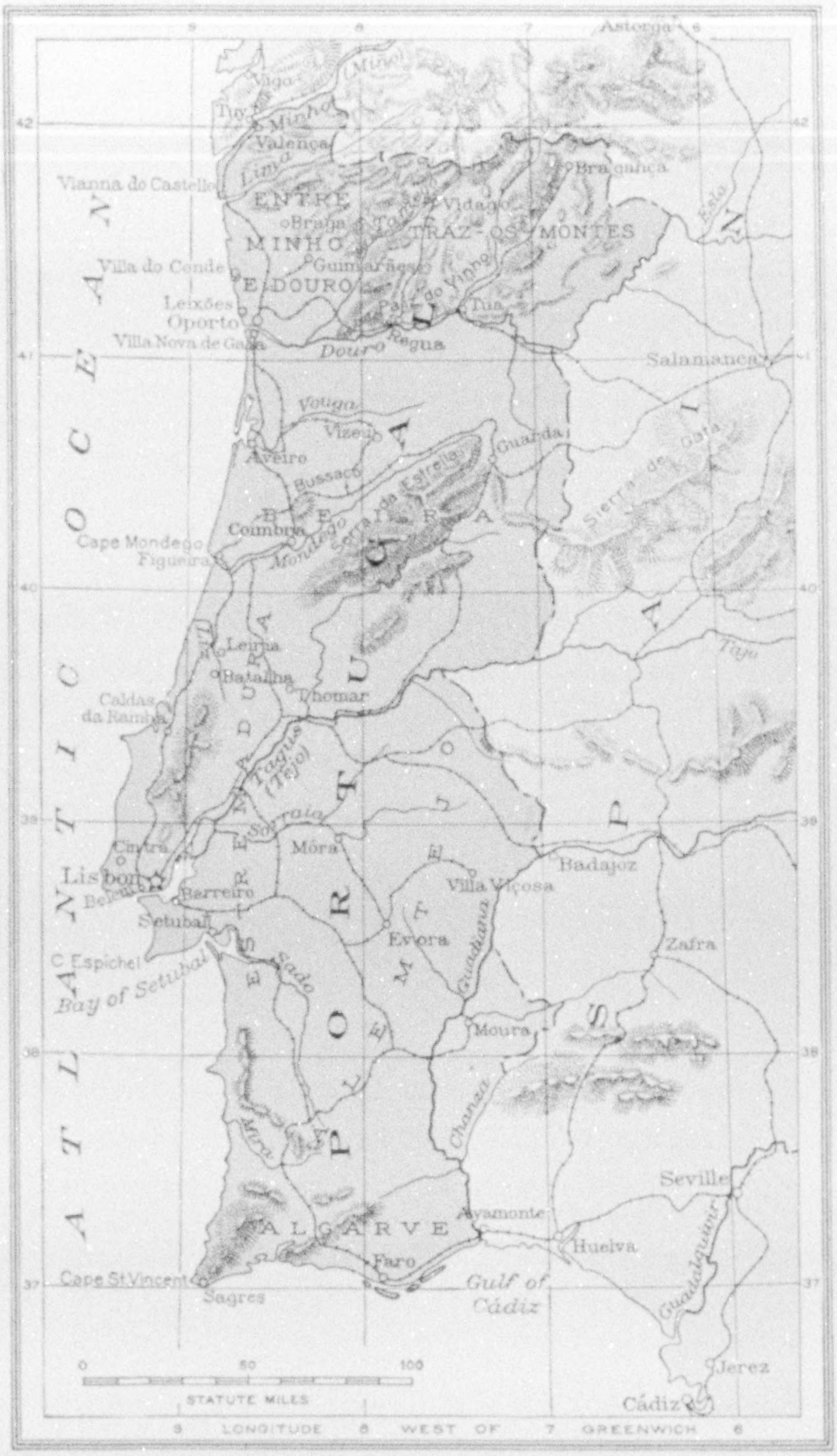
* See, also, "The Greatness of Little Portugal," by Oswald Crawfurd, in the National Geographic Magazine for October, 1910.

* See, also, "The Woods and Gardens of Portugal," by Martin Hume, in the National Geographic Magazine for October, 1910.


Astorga
Viga
Minho
Tuy
Valença
Lima
Vianna do Castello
ENTRE
Braga
MINHO
E DOURO
TRAZ-OS-MONTES
Bragança
Vidago
Guimarães
Villa do Conde
Leixões
Oporto
Villa Nova de Gaia
Douro
Regua
Tua
Esla
Salamanca
Vouga
Vizeu
Aveiro
Bussaco
Guarda
Serra da Estrella
Sierra de Gata
Coimbra
Mondego
Cape Mondego
Figueira
BEIRA
Leiria
Batalha
Thomar
Caldas da Rainha
Tajo
Tagus (Tejo)
Sorraia
Cintra
Lisbon
Belem
Barreiro
Mora
Villa Viçosa
Badajoz
Setubal
C Espichel
Bay of Setubal
Sado
Evora
Guadiana
Zafra
Moura
Chanza
Mira
ALEMTEJO
ESTREMADURA
PORTUGAL
SPAIN
ATLANTIC OCEAN
Seville
ALGARVE
Ayamonte
Huelva
Faro
Gulf of Cádiz
Guadalquivir
Cape St Vincent
Sagres
Jerez
Cádiz
0 50 100
STATUTE MILES
9 LONGITUDE 8 WEST OF 7 GREENWICH 6
42
41
40
39
38
37

Drawn by A. H. Bumstead

A SKETCH MAP OF PORTUGAL

are embowered in red and pink rambler roses. There are picturesque mills, with huge water wheels, beside the clear streams, and every fern-bordered patch of cultivated ground is so carefully tended that not a blade of grass seems out of place. Trellised six feet above the ground, on tall, granite posts, are sturdy vines whose grapes yield the tart red wine of the region.

The railway follows the Minho River to the ocean and then parallels the Atlantic.

The peasants of the north differ little in blood and heritage from their Galician neighbors. Both speak more or less the same language, the dialect of the Spanish *Gallegos* being classed as Portuguese, a tongue less changed than Castilian from the Latin current when Rome ruled the Peninsula, but influenced by many contacts, Celtic, Arabic, and aboriginal Brazilian among them. It has even certain affinities with the French.

"Between 1580 and 1640, when Spain ruled Portugal, Portuguese writers and the people in general endeavored to render the language as different as possible from the Spanish, and the gulf has kept on widening," a learned Portuguese once told me.

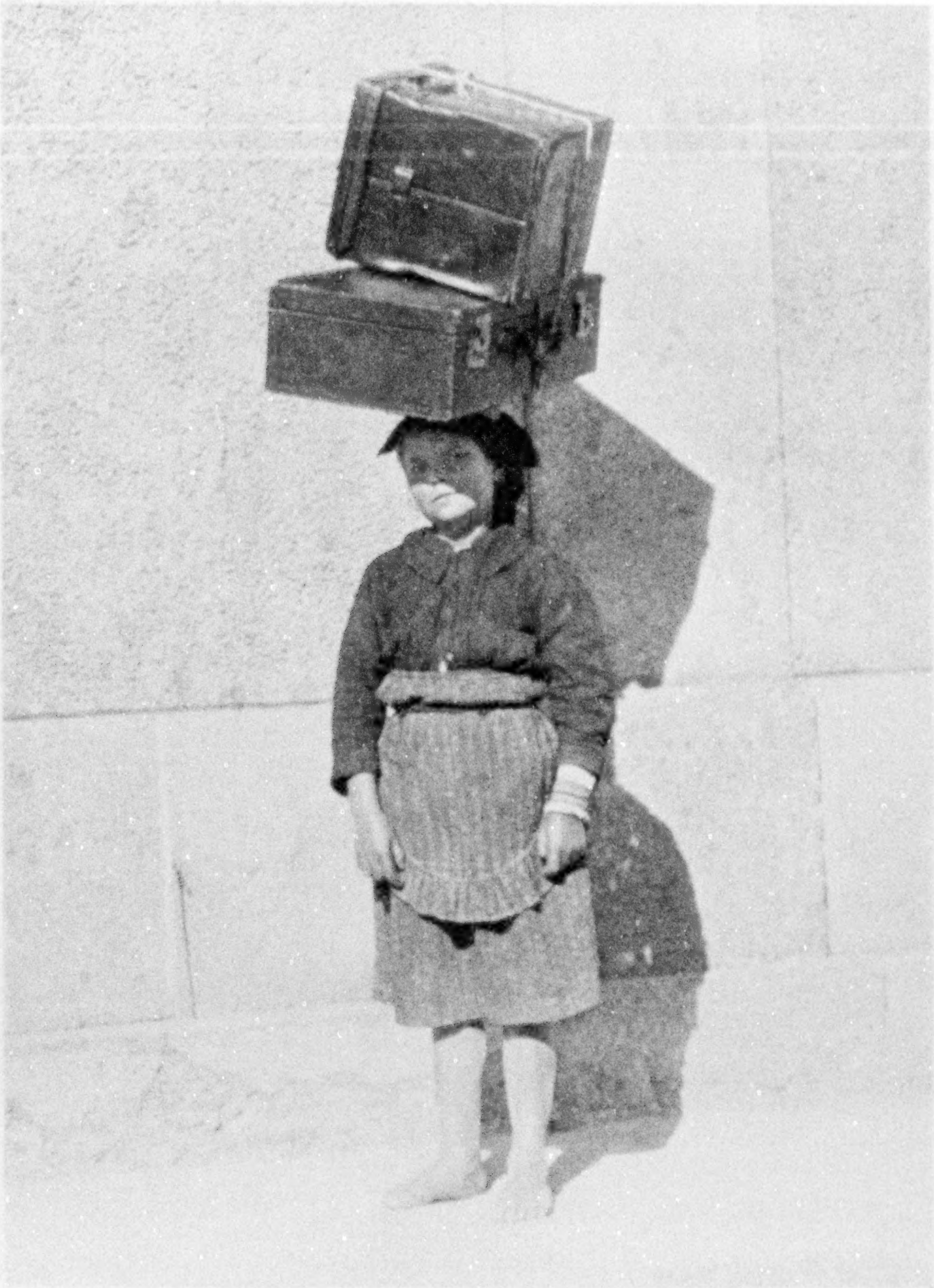
Although illiterate, these northern peasants are industrious, independent, and they own their land. Politicians and military chiefs, in Lisbon and Oporto, may come and go, townsmen dodge revolutionary bullets; but in the country stalwart men and handsome, full-bosomed women toil peacefully in the open. From the little stone houses with thatched roofs comes the click of the loom (see, also, Color Plate XVI).

OXEN YOKED DIFFERENTLY FROM THOSE OF SPAIN

Along the well-paved, tree-bordered road clogs a man in wooden-soled shoes carrying a long goad to urge on a pair of huge, buff-colored oxen with widespread, curving horns. In Portugal oxen are yoked from the shoulders instead of from the horns, as is the custom in Spain. The cart, with its creaking wooden wheels, is an archaic type (see illustration, page 578).

In a near-by field a barefoot woman with tucked-up skirt, an orange-colored handkerchief wrapped about her head, has dropped her hoe and is adjusting a protective straw cape to a conical haystack. Near her little vine-covered home is a huge corn bin raised on four stone posts, its thatched roof surmounted by a cross, and by a second ornament peculiar to the region, an ancient emblem of fertility. Wheat, maize, oats, and rye are cultivated here. The palatable dark peasant bread is made from corn and oatmeal.

Some of the farmers with side whiskers resemble Irishmen. At a railway station a blind man is playing a merry tune on bagpipes, smaller in size, but fully as shrill as those of the Scottish Highlands.



Photograph by Franklin Adams

A LEVEL-HEADED LITTLE LADY

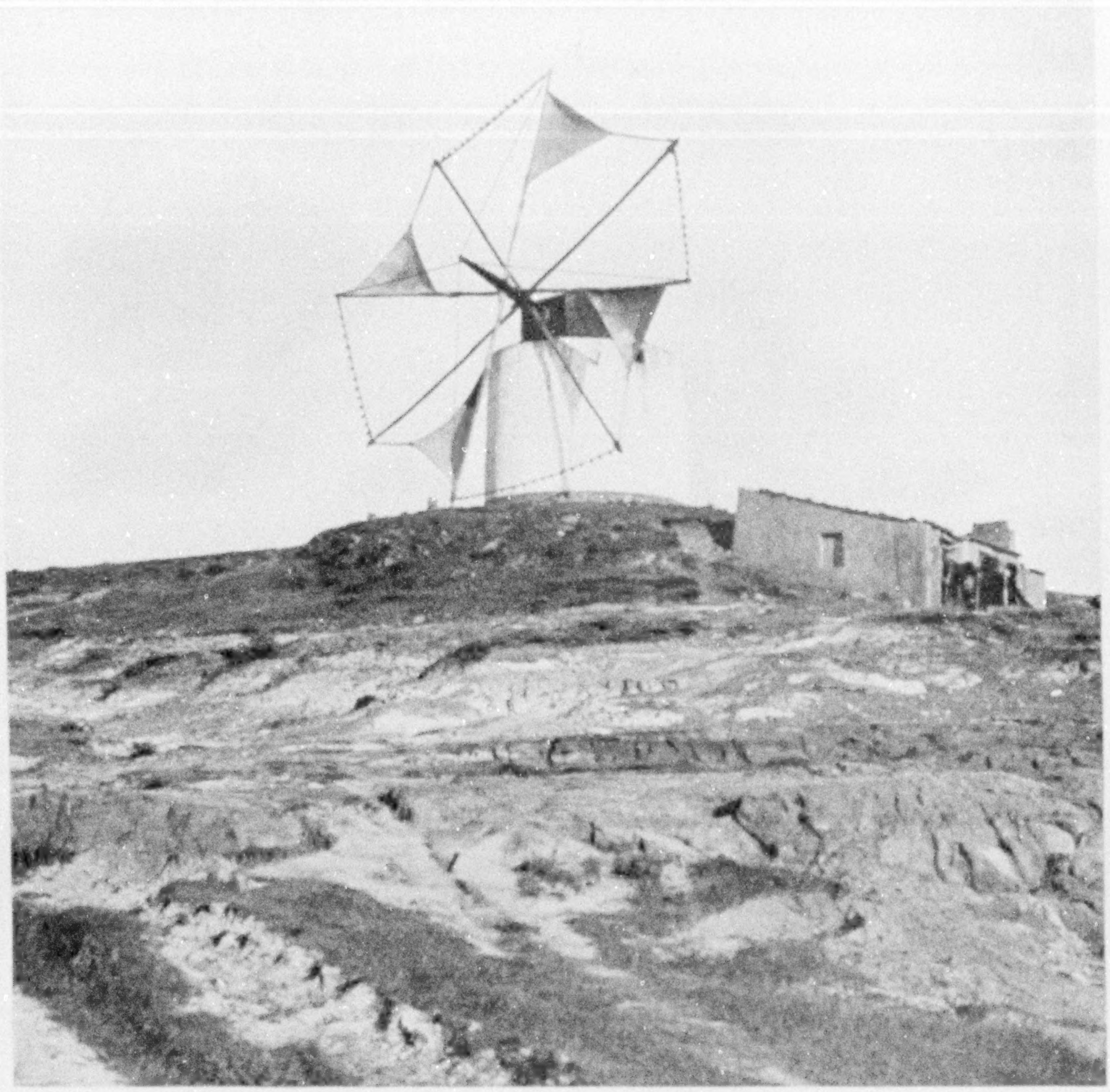
Girls serve as hotel porters in towns of north Portugal. Balancing heavy bundles of baggage on their heads, they trot up hills and climb stairs without even touching their hands to their burdens. This young girl is from the Villa do Conde.

HOW PORT WINE WAS INTRODUCED INTO ENGLAND

Although Portugal's imports greatly exceed its exports, the industry and frugality of these peasants make national life possible. Men and women of the Minho type have emigrated to the New World and every returning ship brings back their savings to keep the home fires burning.

At Vianna do Castello the Lima River meets the sea. The town was very much on the map in the days when sailing craft ruled the waves. Here, in the twelfth century, English Crusaders landed to aid the Portuguese in expelling the Moors, the beginning of the British-Portuguese alliance. From here the mellow wine called "port" was first shipped to England (see, also, text, page 589).

After Vasco da Gama had opened the sea route to India, there was a brisk traffic between Vianna and the ports of Flanders, spices, silks, and porcelains from the Far East being exchanged for manufactured articles. It was then that



Photograph by Gervais Courtellemont

A "MOINHO DE VENTO," OR PORTUGUESE WINDMILL

the art of Flemish lace making was brought to the wives and daughters of the Portuguese fishermen, who still make "pillow lace."

From Vianna ships sailed far west to the banks off Newfoundland to bring back dried cod, which, in spite of all the fresh fish in Portuguese waters, has ever since been a staple article of diet. Portuguese fishing boats still make the long transatlantic voyage for cod.

The hotels of the Minho are a delightful surprise. Little known to any foreigners save a few British, they are maintained throughout the year for a short summer season, when all the fashionables of central and southern Portugal migrate like birds to the cool, green north. In June the Minho hotel season had not opened and we were the only guests in the hotel on Santa Lucia Hill, overlooking old Vianna.

We reached the heights by an inclined railway and a steep climb up several flights of stone steps. Beside us walked a girl in her early teens with our three heavy suitcases balanced on her head. When we protested she laughed and declared she could carry twice that weight. Throughout the country we marveled at the burdens borne on the heads of women, who chatted as they walked and seldom used their hands to steady the load.

The menu at Portuguese tourist hotels is French, with an occasional native dish, like *caldo verde* (soup with greens) or *canja*, a popular chicken and rice mixture. It is said that several dishes famous in

French cuisine were part of the spoils of the Peninsular War, when a book of recipes from one of the big Portuguese monasteries was carried back to Paris.

At Vianna we were introduced to the good, red "Lamego" wine and the golden "Amarante."

We paid a tax of five per cent of the hotel bill to the Tourist Society of Lisbon toward keeping the automobile roads in condition. In the north this money seems well spent; but when the granite hills are left behind and central Portugal reached, the ruts in the road make it evident that the travelers' contribution toward highway improvement is inadequate.

SANTA LUCIA AFFORDS ONE OF WORLD'S FINEST VIEWS

Few views surpass the one from Santa Lucia—those from the heights above Rio de Janeiro * and Funchal, perhaps—both in Portuguese-speaking lands.

Below our balcony lay a terrace ablaze with flowers; beyond, a forest of pines, chestnuts, and mimosas in golden bloom. Canaries, greenish in hue, like those in the Azores, sang in the trees. Far below lay the city of freshly painted white walls and weather-beaten terra cotta roofs framed in chrome-green fields beside a blue-green sea. In the harbor were red lateen sails of fishing boats homeward bound.

Looking up the valley, we saw the Lima River winding among the hills on whose slopes peaceful white villages nestled. In the distance rose the purple mountains guarding the road to Spain. There was no sound, save the singing of the birds, to break the magic spell.

One morning, when the cuckoo was calling in the woods, we went down from the peaceful heights and crossed the city to the harbor. By the old gray fort three golden-haired, barefoot women were repairing the road; they said they earned five escudos (25 cents) a day. Others were loading into their oxcarts seaweed to be dried and used as a fertilizer.

Each pair of oxen wore a high, ornamented wooden yoke, or *canga*, of home manufacture, handed down from father to son. They are the best bit of "local color" to be found in all Portugal. Their pierced and painted designs differ with the locality. Some have involved, geometrical patterns, undoubtedly Moslem survivals; others have crosses and flowers and may be of Gothic origin; some are surmounted by rows of tufted horsehair (see, also, Color Plate X).

The patient, plodding oxen seem in no way discomforted by these heavy yokes, which, from Oporto south, gradually diminish in height, the decorations disappearing before Lisbon is reached.

Braga, in a sheltered valley back from the sea, was our next town. A book, published locally, contained the startling information that "the town was founded 3.531 years after the creation of the world, by companions of Hannibal, the Carthaginian."

The Romans transformed the village into a provincial capital. Farther east we saw the stone-paved, rock-bordered road which once connected this Roman city of Lusitania with Astorga and Tarragona, in Spain, continuing on to France and Italy. The peasants still use this ancient highway over which the legions marched. After the downfall of the Romans, Braga became the stronghold of Germanic tribes, later to be occupied by the Moslems, Berber and Arab, who swept up from Morocco.

"Of all the sights in Portugal, I like best the *romarias* in summer at the shrine of Bom Jesus above Braga," an Englishman, who has lived 30 years in Portugal, told me.

PILGRIMAGE ALSO IS HOLIDAY

A pilgrimage and an outdoor holiday combined is the romaria, a very old Iberian institution, whose roots are embedded in traditional pagan feasts. The shrine of Bom Jesus do Monte (Good Jesus of the Mountain) is on a densely wooded hill overlooking the town, where pines, chestnuts, oaks, cork oaks, sycamores, and other trees, not, like these, indigenous to the country, surround the great stone church, with its outlying chapels, and the three hotels which stand near it.

By inclined railway we ascended the steep hill whose slopes are beautified by flowering shrubs. The pilgrims trudge

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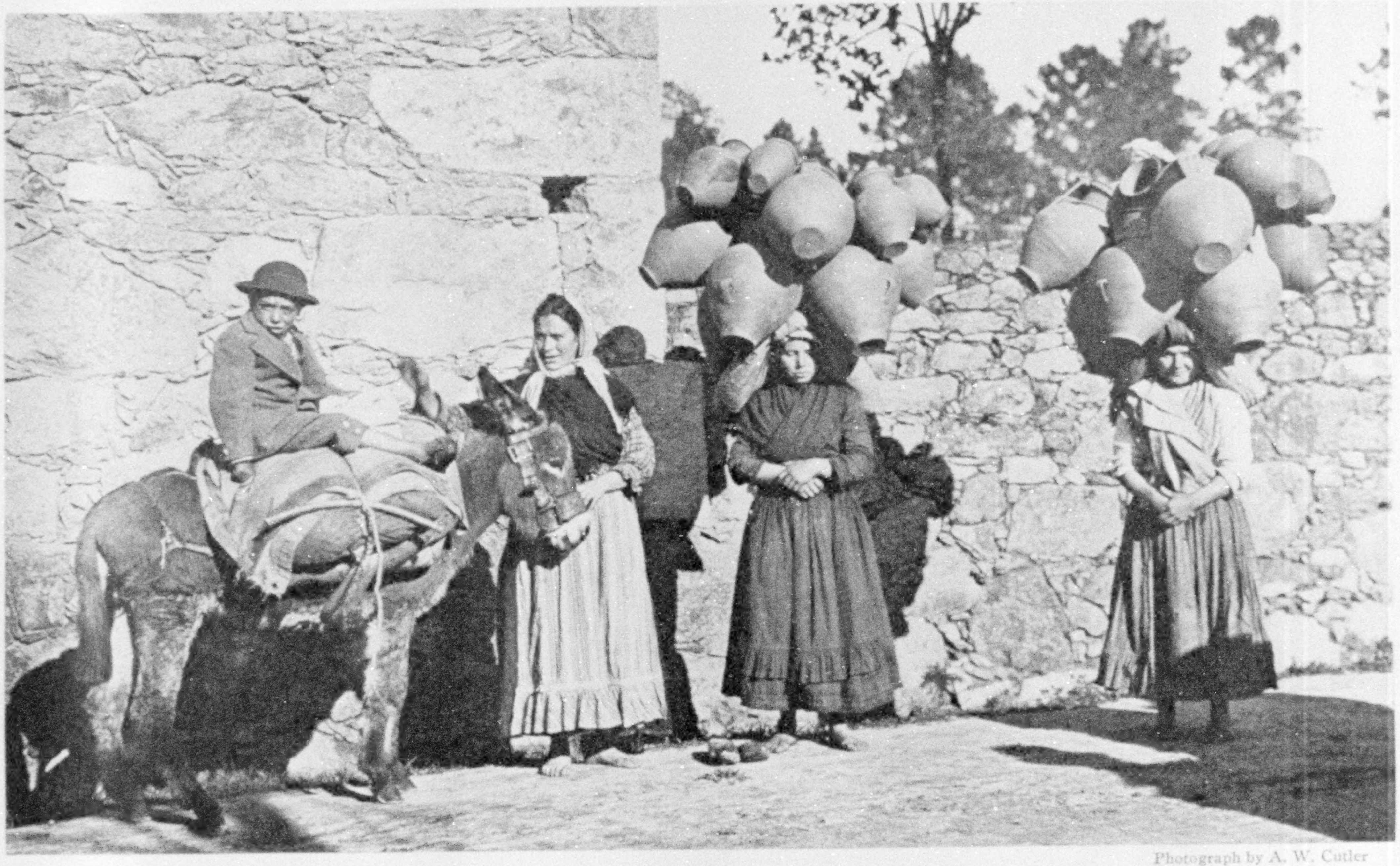
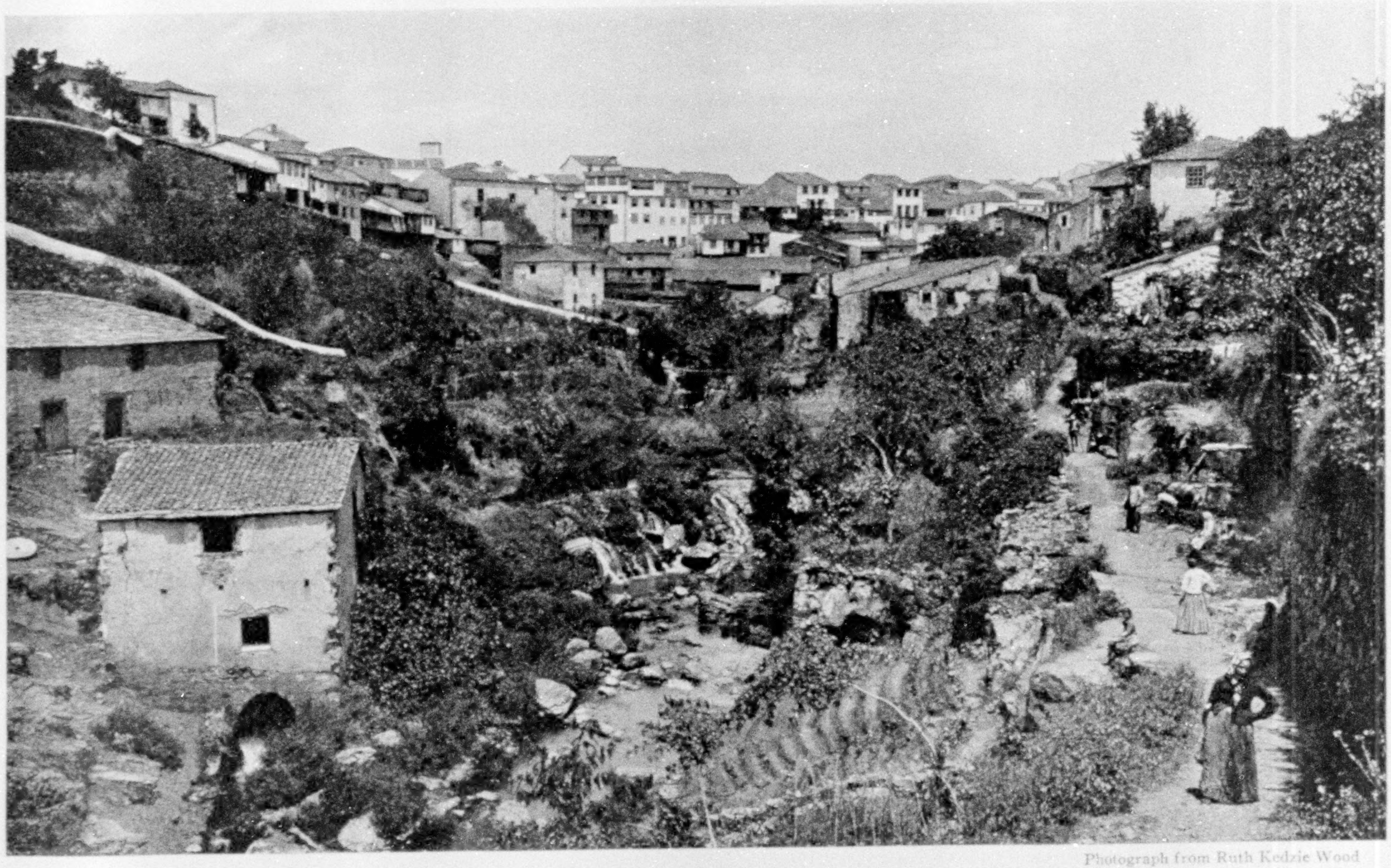
* See, also, "Rio de Janeiro in the Land of Lure," by Harriet Chalmers Adams, in the NATIONAL GEOGRAPHIC MAGAZINE for September, 1920.



Photograph by A. W. Cutler

TWO-THIRDS OF ALL WORK IN PORTUGAL IS DONE BY THE WOMEN

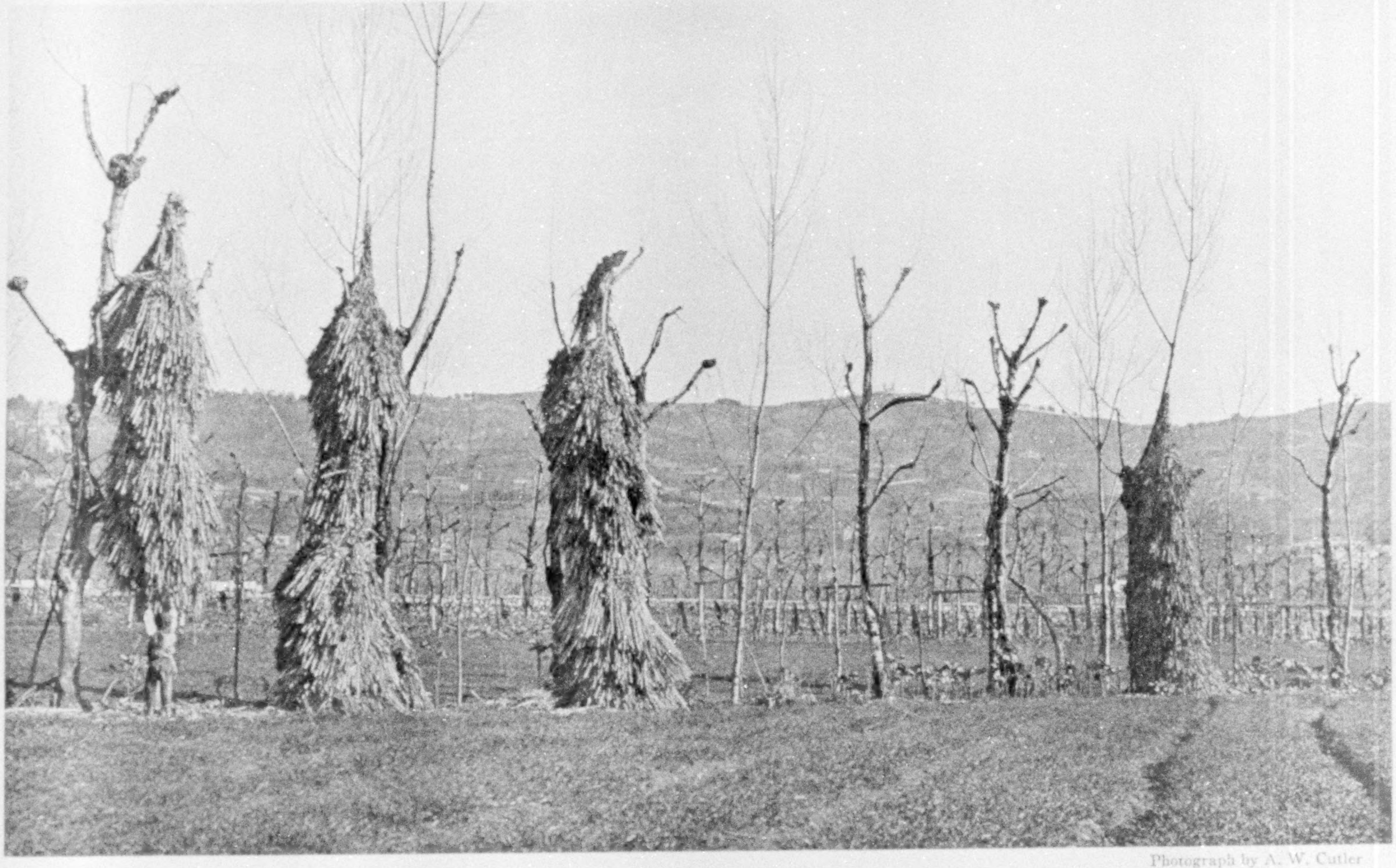
Women row heavy barges, plow, wield the pick and they receive a smaller wage than the men. Along the roads march peasant women bearing enormous burdens on their heads, accompanied by men carrying nothing. Women wield the hoe afield, while men sit in the shade, smoking. Yet, in their simple way, the peasant women seem contented.



Photograph from Ruth Kedzie Wood

THE HOUSE OF BRAGANZA ONCE HELD A THIRD OF ALL LAND IN PORTUGAL

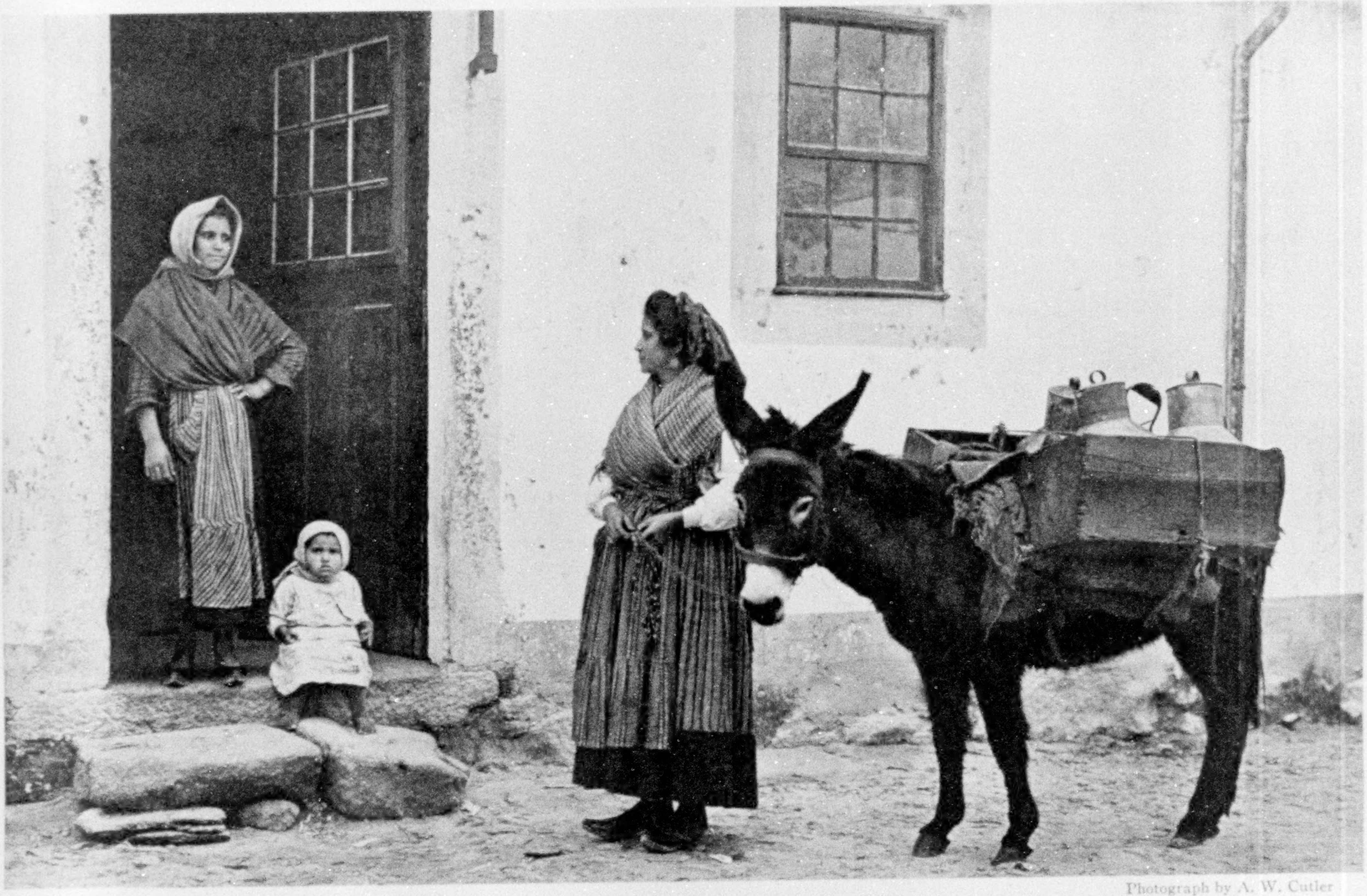
Formerly the poorer classes of Portugal were greatly oppressed by landed nobles, who also held the church patronage and the dispensation of justice. About 1481 "John the Perfect" attacked the nobles' hold on the land. He executed the Duke of Braganza and a hundred other nobles and confiscated the great estates. The town of Bragança, on the northeast frontier, is remarkable for its distinct Jewish type of inhabitants, descendants of refugees from Spain.



Photograph by A. W. Cutler

PORTUGAL IS ONE OF THE FEW EUROPEAN COUNTRIES WHERE PEOPLE EAT MUCH CORN

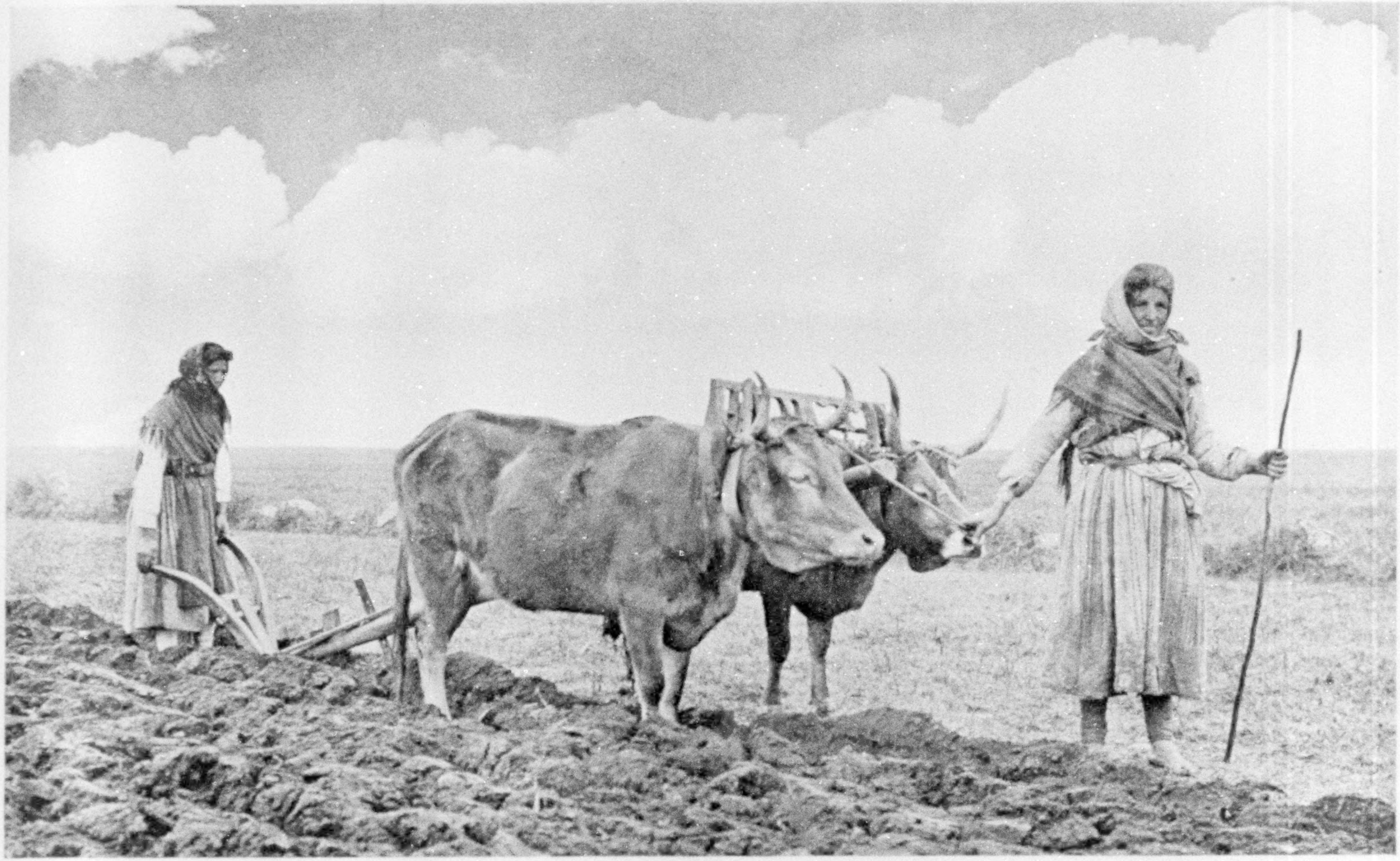
These grotesque objects are stacks of Indian corn built around small trees, after the custom of north Portugal. Often women weave straw capes to cover these stacks against rain. The boy at the left is pulling out fodder to feed the oxen. Corn is a staple food in north Portugal. Peasants mix it with oatmeal to make their dark, heavy bread called "broa."



Photograph by A. W. Cutler

A MILKY WAY IN PORTUGAL

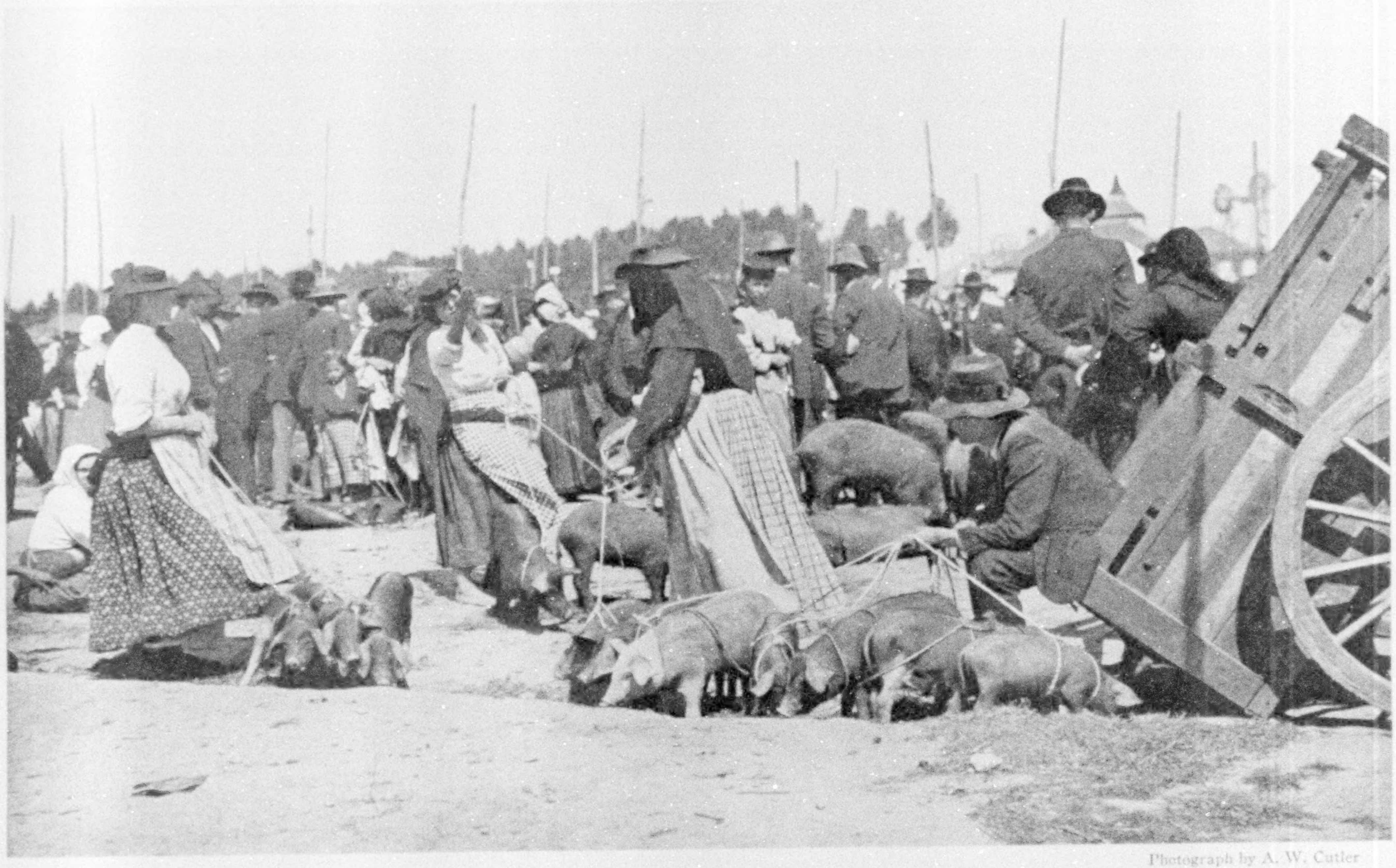
Towing her "hay-burning" milk-wagon, the milkwoman makes her morning rounds in Vianna do Castello. Customers must come out into the street to get their supply. Should the milk peddler leave her donkey, even for a moment, that sleepy animal would probably lie down and wreck the cans.



Photograph by A. W. Cutler

MANY PORTUGUESE FARMING METHODS WERE INHERITED FROM THE ROMANS

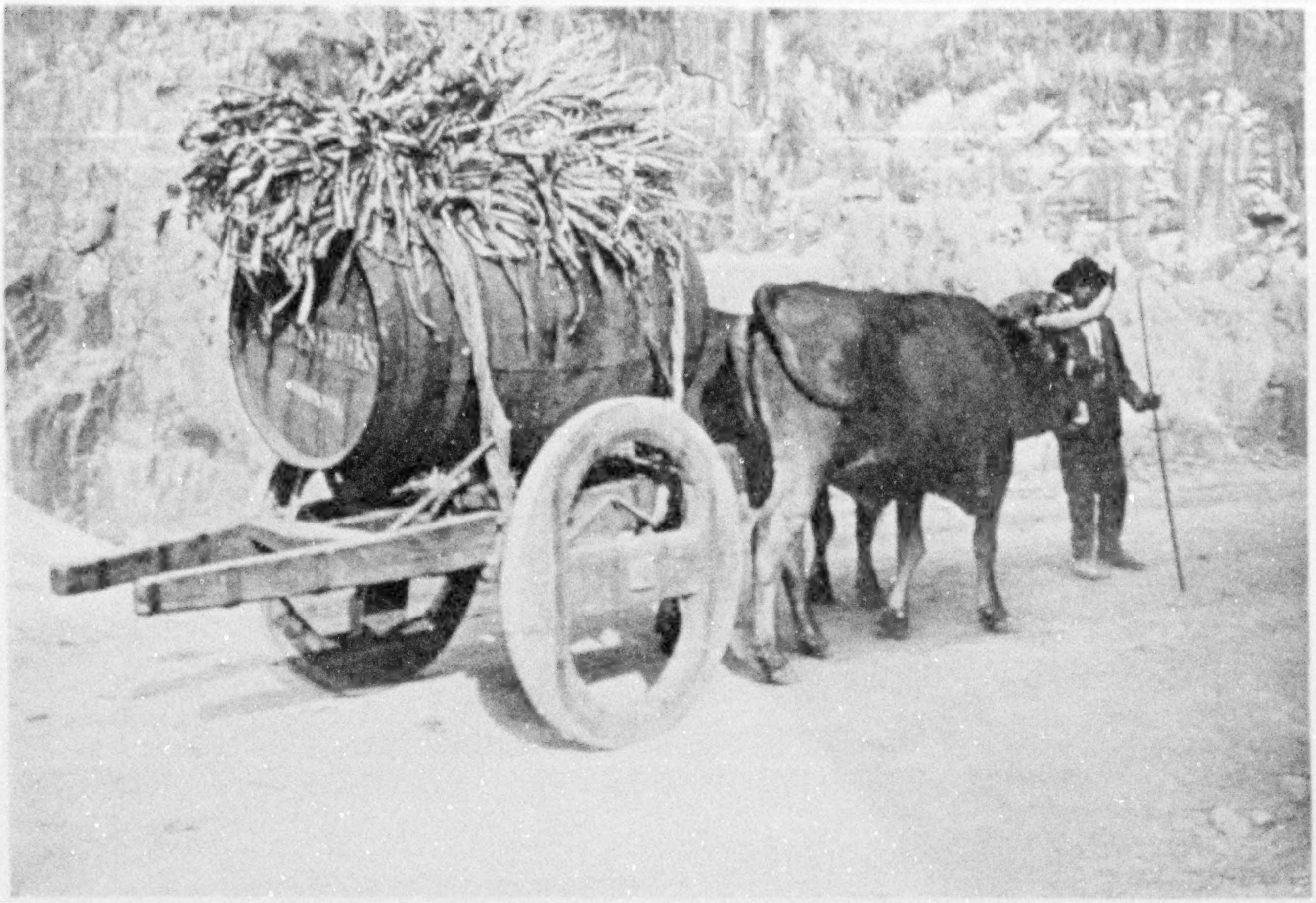
Though farming is the main business of Portugal, the country is forced to import food. Oxen and women do most of the fieldwork. The common Portuguese work ox is a tawny, muscular animal with horns often 5 or 6 feet from tip to tip. These women are plowing in the fields at Vianna do Castello, in northern Portugal.



Photograph by A. W. Cutler

THEIR DAY TO SHINE

In rural Portugal special animal sales days are observed. Then oxen, sheep, donkeys, pigs, and goats occupy their own sections in the market place. Often, on roads leading to market, one sees squealing herds of little pigs brushed and scrubbed clean and pink to look their best on sales day. Sometimes they are headed by an old sow, a sort of porcine Judas, trained to lead them to slaughter.



Photograph by Gervais Courtellemont

BUSINESS FOR BACCHUS

These Portuguese bullocks are hauling a cask of wine. When heavily loaded, the ungreased wooden wheels of these carts whine and howl like hyenas.

up the long flight of stone steps leading to the church, hundreds of men, women, and children, dressed in their very best, carrying musical instruments and baskets containing food. Penitents ascend the steps on their knees.

Conspicuous among the women are those from Vianna do Castello, whose costume is the most colorful and elaborate. Many of them wear pendent gold earrings, heavy gold necklaces hung with crucifixes, and heart-shaped lockets set with precious stones (see, also, Color Plates I and XII).

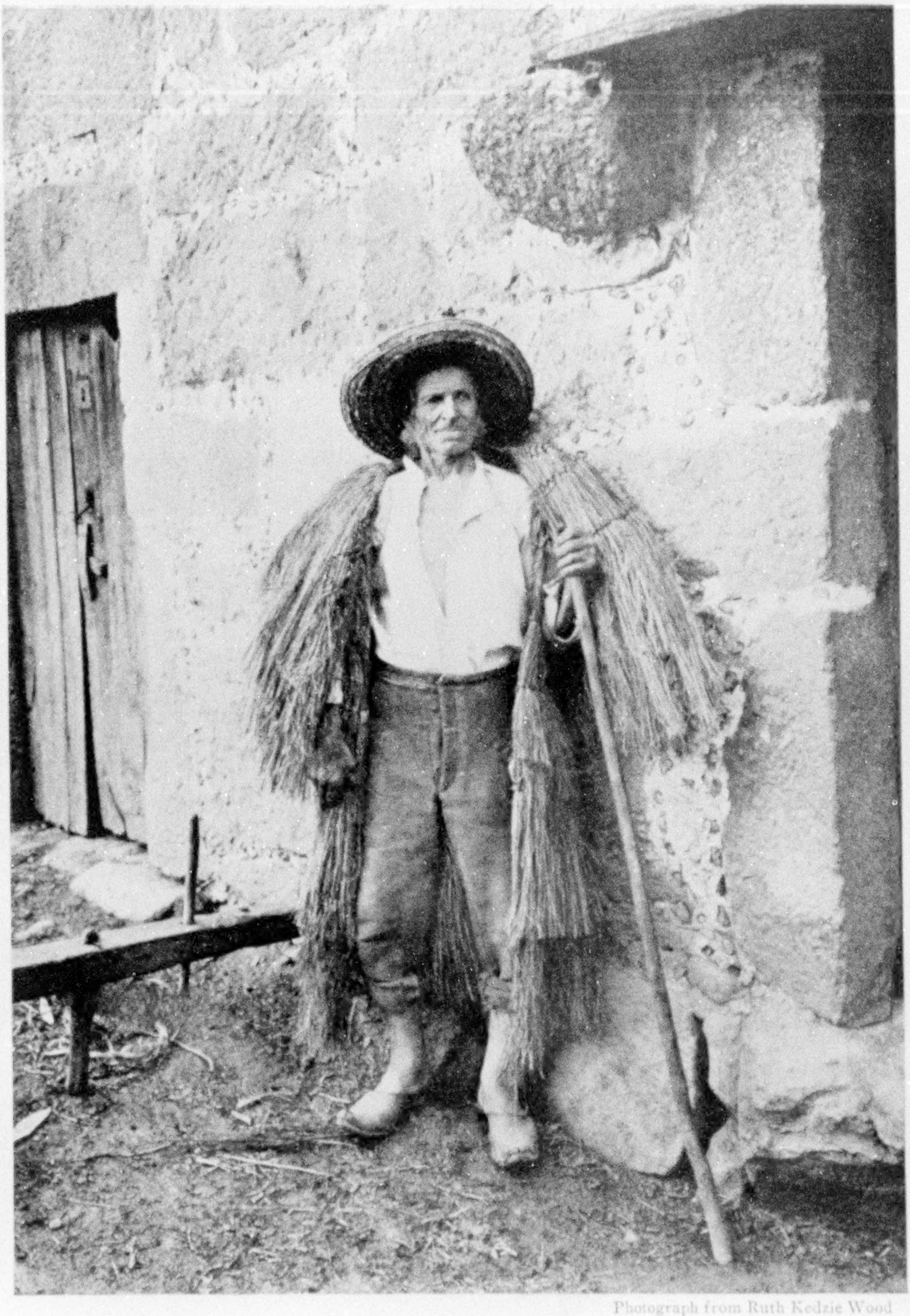
Oxcarts toil up the winding road on the far side of the mountain, with barrels of wine on wheels, blankets, and cooking utensils for camping out in the forest. Following the religious service and solemn church procession, there are three days and nights of feasting, singing, dancing, and fireworks with many skyrockets.

Here the native songs of the north are heard—some old, some improvised on the spot—telling of the happenings of the day. Here the Celtic bagpipes shrill their loudest and the viola, guitar, and tambourine accompany the ancient dance, slow and sedate, with movement of body, arms, and hands. Some of the women at Bom Jesus might have stepped from a Grecian vase.

Both Braga and Guimarães are off the main railroad, and the short distance between is more easily covered by motor.

The fields along our way were gay with wild flowers, the hills covered with cistus bushes, whose white blossom resembles the wild rose. The grapevines no longer were trellised on stone posts, but usurped the small boys' prerogative of climbing the cherry trees. Halfway between the two towns we came to a hill on whose summit lie the ruins of the most extensive Celtiberian settlement to be found in the whole of the Peninsula. The place is known locally as Citânia.

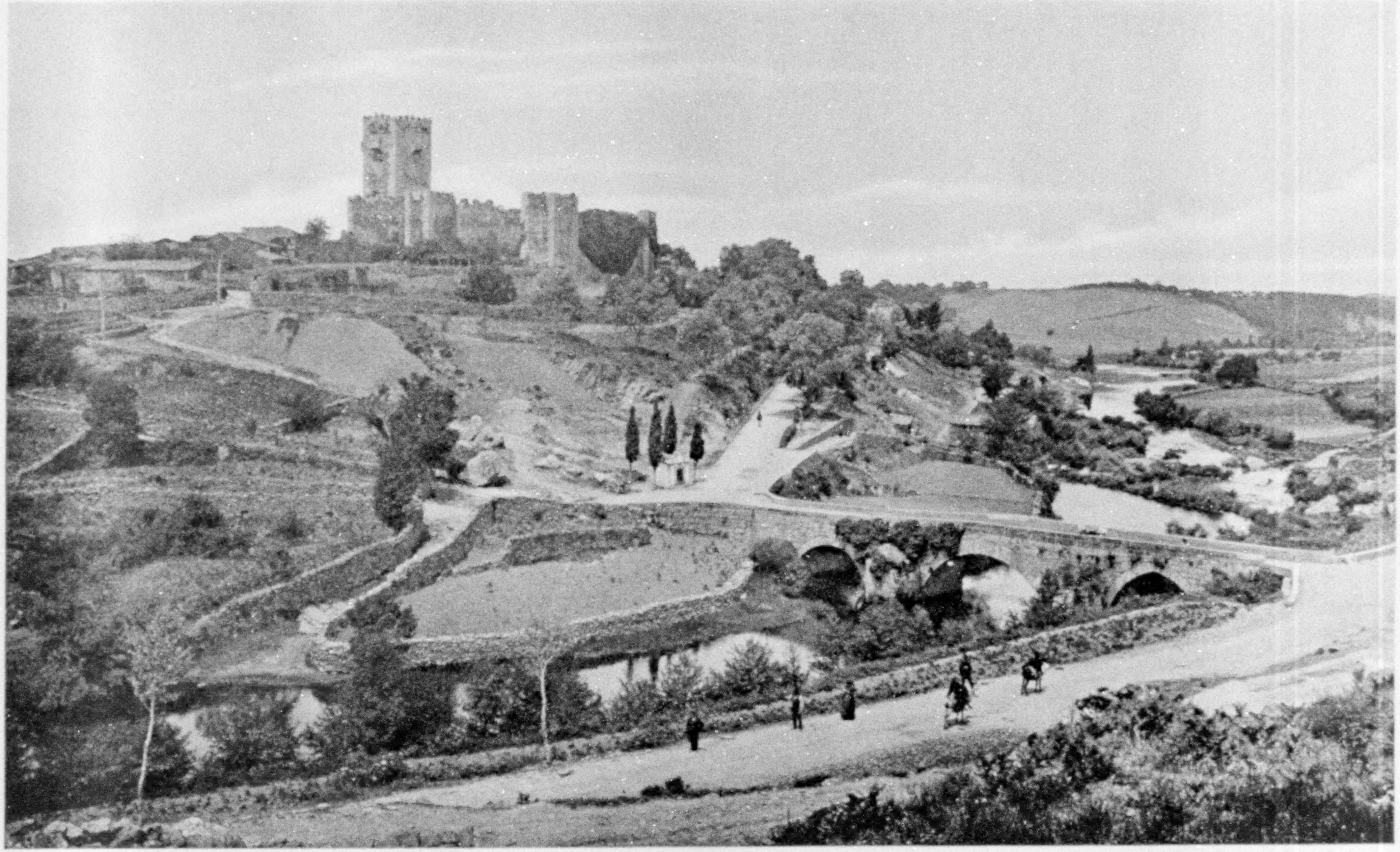
Geological maps, recently published in Madrid, tell us that back in the misty ages, when the world was young, there were a few scattered islands where Spain and Portugal now stand. On the largest of the group, the northwest Spain and northern Portugal of to-day, granite hills raised their august heads. By volcanic action, land to the east was uplifted to



Photograph from Ruth Kedzie Wood

A PRIMITIVE RAIN COAT

Primitive man probably invented this crude cape of straw, which turns rain and breaks the wind. It is used in Portugal and in many other parts of the world. Often hunters wear it. When they sit or squat, the grass cape takes the form of a shock of grain and thus makes a good "blind."



Photograph from Ruth Kedzie Wood

PORTUGAL IS A PARADISE FOR LANDSCAPE ARTISTS AND ARCHITECTS: AN OLD CASTLE NEAR BRAGA join another island fringe, and the Iberian Peninsula was formed.

Then came the age of migrations. We can go as far back as a black-haired, brown-eyed people we call the Iberians, allied to the Berbers of Morocco, who wandered into the Peninsula some ten thousand years ago, either from eastern Europe or northern Africa, settling along the Mediterranean shore and around to the mouth of the Tagus where Lisbon stands to-day. By sea from the north, at a much later period, came the fair-haired Nordic Celts to occupy the other half of the circle along the shores of the Atlantic and the Bay of Biscay. Raids to the east, raids to the west, the taking of women by the victors; and, in the heart of the Peninsula, the Celtiberian race was formed.

Leaving the automobile in the village of Guimarães, at the foot of the hill, we started the ascent, preceded by three merry, ragged urchins, our volunteer guides.

The steep, rocky path widens into a walled road paved with large granite blocks. The stone trough beside this road once carried water from a spring on the heights. On the summit and shoulder of the hill are the remains of a settlement which sheltered several thousand people. There are ruins of dwellings and granaries, circular in shape, with rectangular surrounding walls, and an outlying cemetery.

In a fallen building I noticed grooves cut in wall stones which may indicate that the rear of the enclosure, where goats were kept, could be barred by means of a drop gate. Objects excavated here and on surrounding hills can be studied in the Martins Sarmento Museum in Guimarães, named after the Portuguese archeologist who devoted the greater part of his life to this work.

GUIMARÃES IS THE MOUNT VERNON OF PORTUGAL

Were I asked to name the most beautifully situated town in Portugal, I should vacillate between Vianna and Oporto; but, without doubt, Guimarães is historically the most interesting. It is the cradle of the Portuguese dynasty. To the delight of the geographer, it is an unspoiled place, where centuries-old buildings still stand. There is the castle in which Affonso Henriques, first King of Portugal, was born in 1094. Its turrets are emblazoned on the arms of Portugal.

The terrace by the parapet of the old castle, where the little prince played in the sunshine, the big stone fireplace in the queen's living room, beside which he sat on winter nights, while pine logs crackled, listening to stirring tales of battle, are still to be seen.

ONCE CELEBRATED FOR LINENS; NOW FAMOUS FOR PLUMS

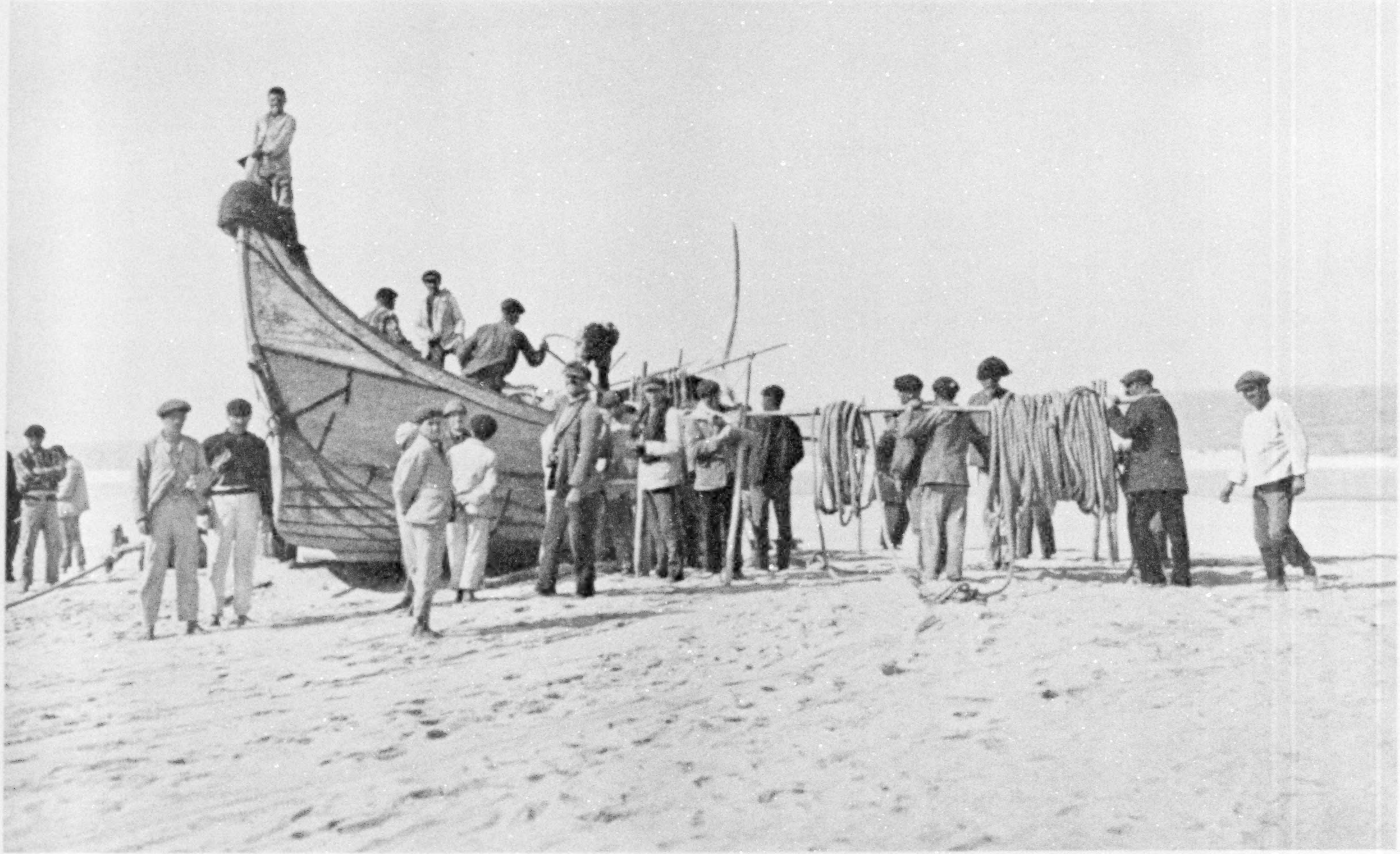
In Guimarães the long avenue lined with white linden trees stands out in remembrance. Their branches meet overhead like the Gothic arches of a cathedral. It was on this sylvan road that we met two old women spinning flax into thread, and recalled that in the Middle Ages Guimarães was celebrated for the manufacture of fine linens, shimmering satins, and wonderfully embroidered church vestments. It is now famous for its plums.

A peculiar feature of the four- and five-story houses, so narrow when compared with their height, is the dome-shaped skylight surmounting the peaked roof. Through it light falls on the stairway, which otherwise would be in darkness. As the sun sets, these glass domes gleam like great jewels. At this hour swallows by the hundreds dart through the streets, skimming the ground in search of insects for their supper.

Our next stop was in old Oporto. Sandbars now block the Douro's mouth and only ships of lesser tonnage come the few miles upstream to Oporto. Larger ships dock in the artificial ocean harbor of Leixões, a little north of the river's mouth.

Oporto's rainbow-tinted, tile-roofed buildings terrace the slopes of a cliff on one side of the Douro gorge. On the opposite side of the canyon is the town of Villa Nova de Gaia, where the port-wine warehouses are located. Two magnificent bridges span the deep gorge.

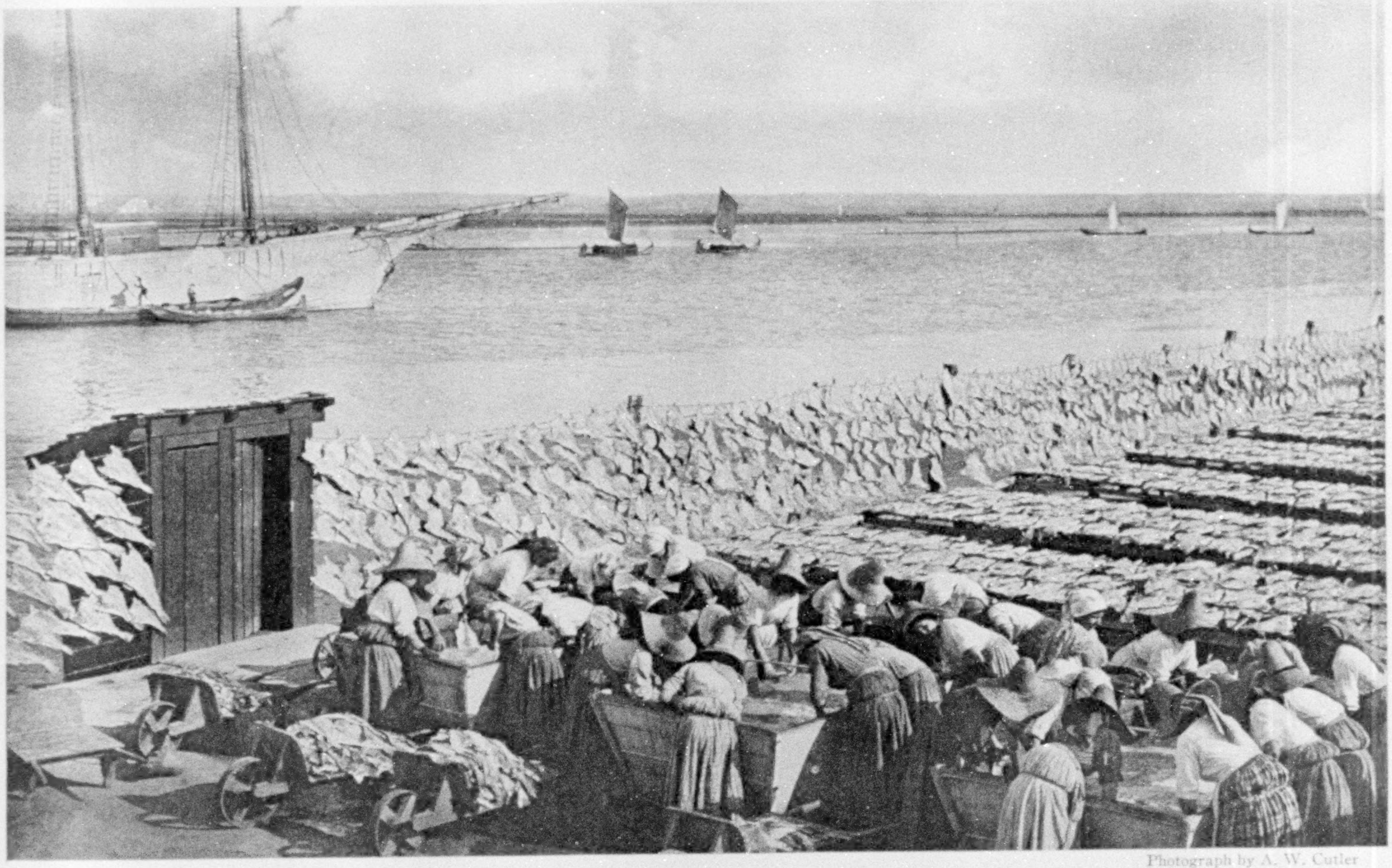
There are three rival views. One is from the Dom Luiz bridge, looking up at the city on the heights and down on the busy water front by the chocolate-colored river, where quaint sailing craft and modern freighter meet. Another view is



Photograph by A. W. Cutler

A SARDINE BOAT AND ITS CREW

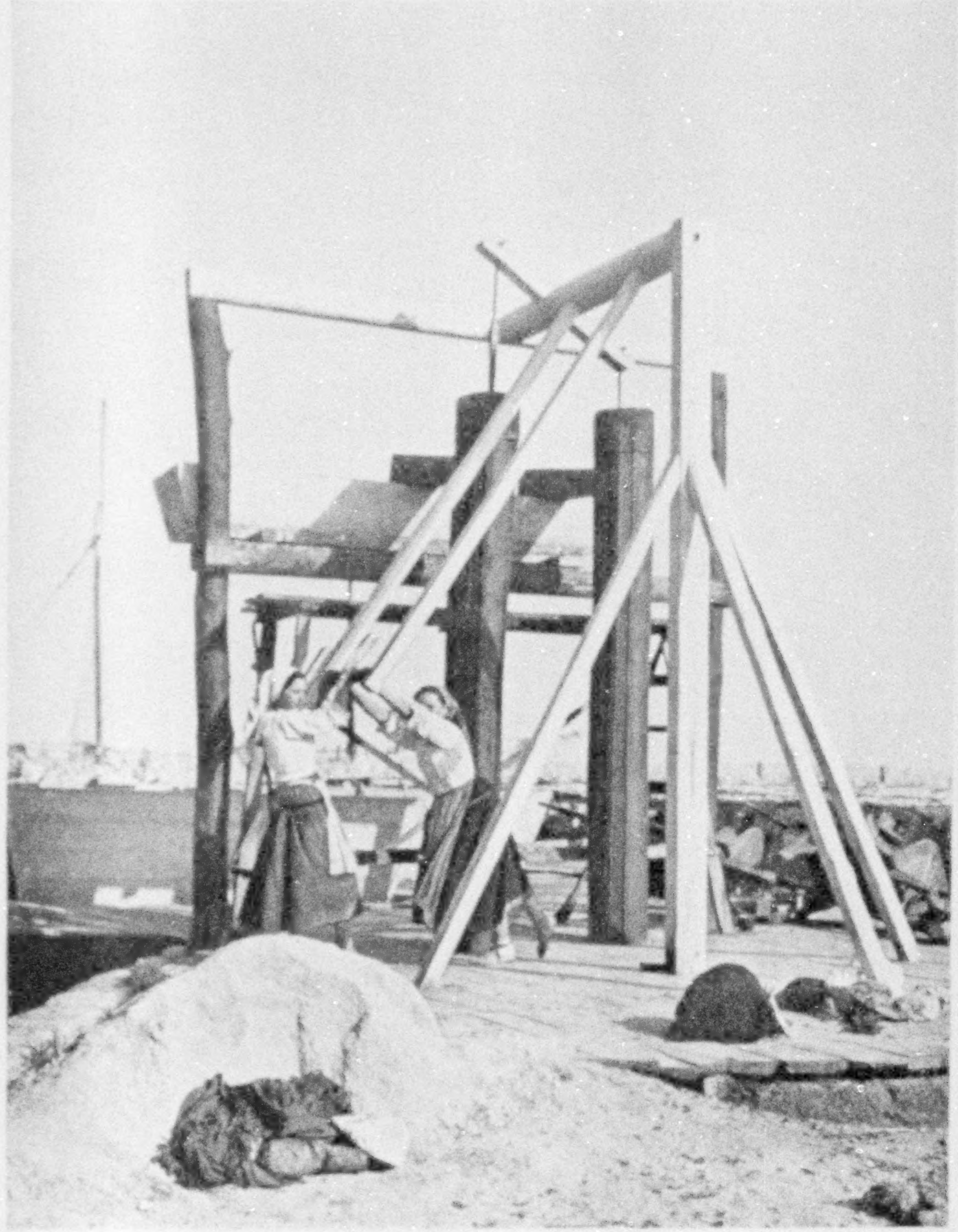
A sardine "run" is an occasion for rejoicing anywhere along the coast of Portugal. When the "sardine alarm" is raised, there is much frantic activity on the beach, with much dragging of nets and ropes and the hurried launching of the high-prowed, Norselike fishing boats, thousands of which are in use.



Photograph by A. W. Cutler

DRIED CODFISH, CALLED "BACALAO," IS A POPULAR DISH IN PORTUGAL

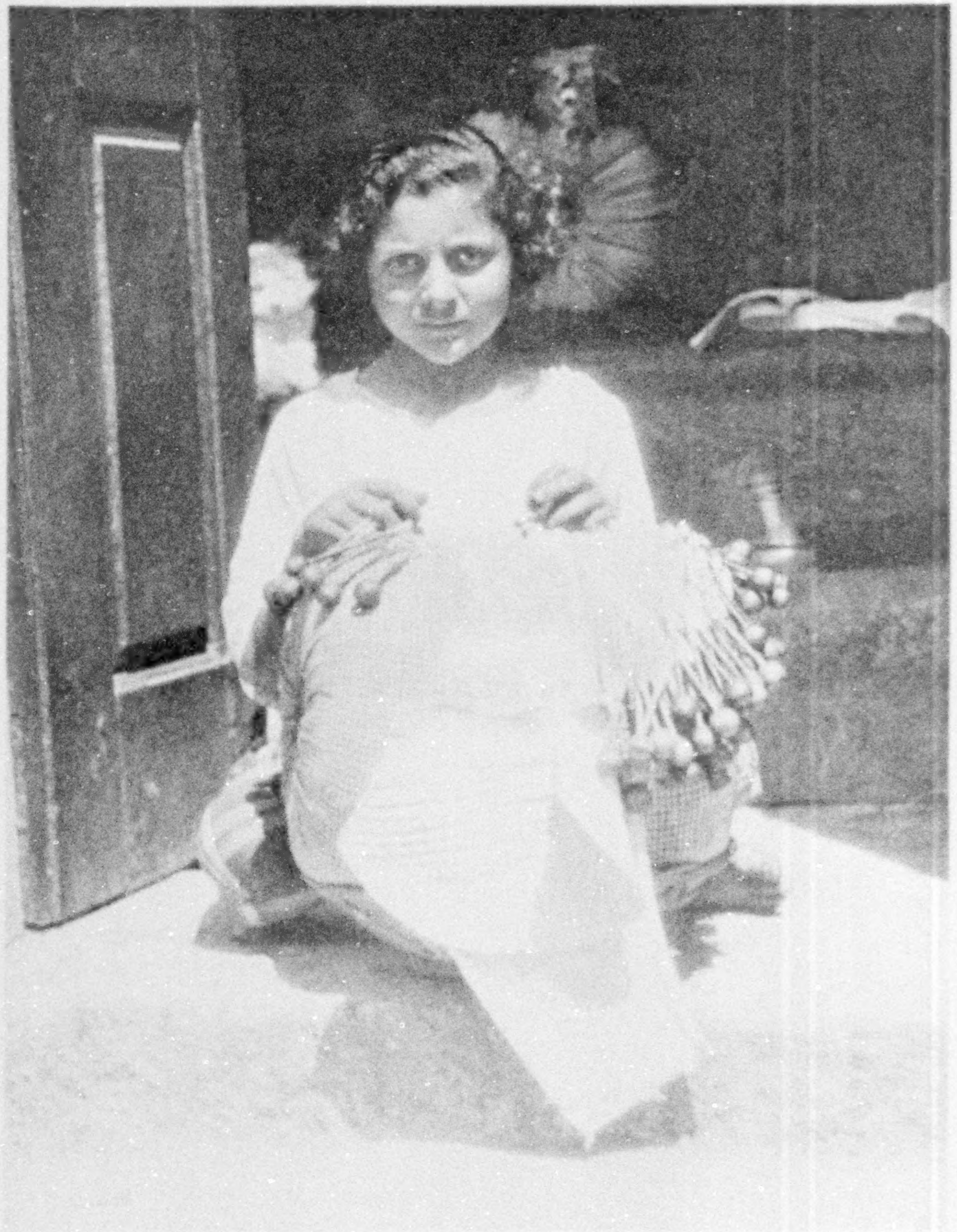
For decades Portuguese boats have gone to the Newfoundland Banks in quest of codfish and thousands are engaged in fishing home waters. Even with impaired olfaction, one may detect the smell of fish in any Portuguese port. Here, on the beach at Aveiro, women in peaked straw hats receive the codfish when landed from the boats, wash them, and dry them.



Photograph by A. W. Cutler

A TWO-GIRL-POWER PUMP

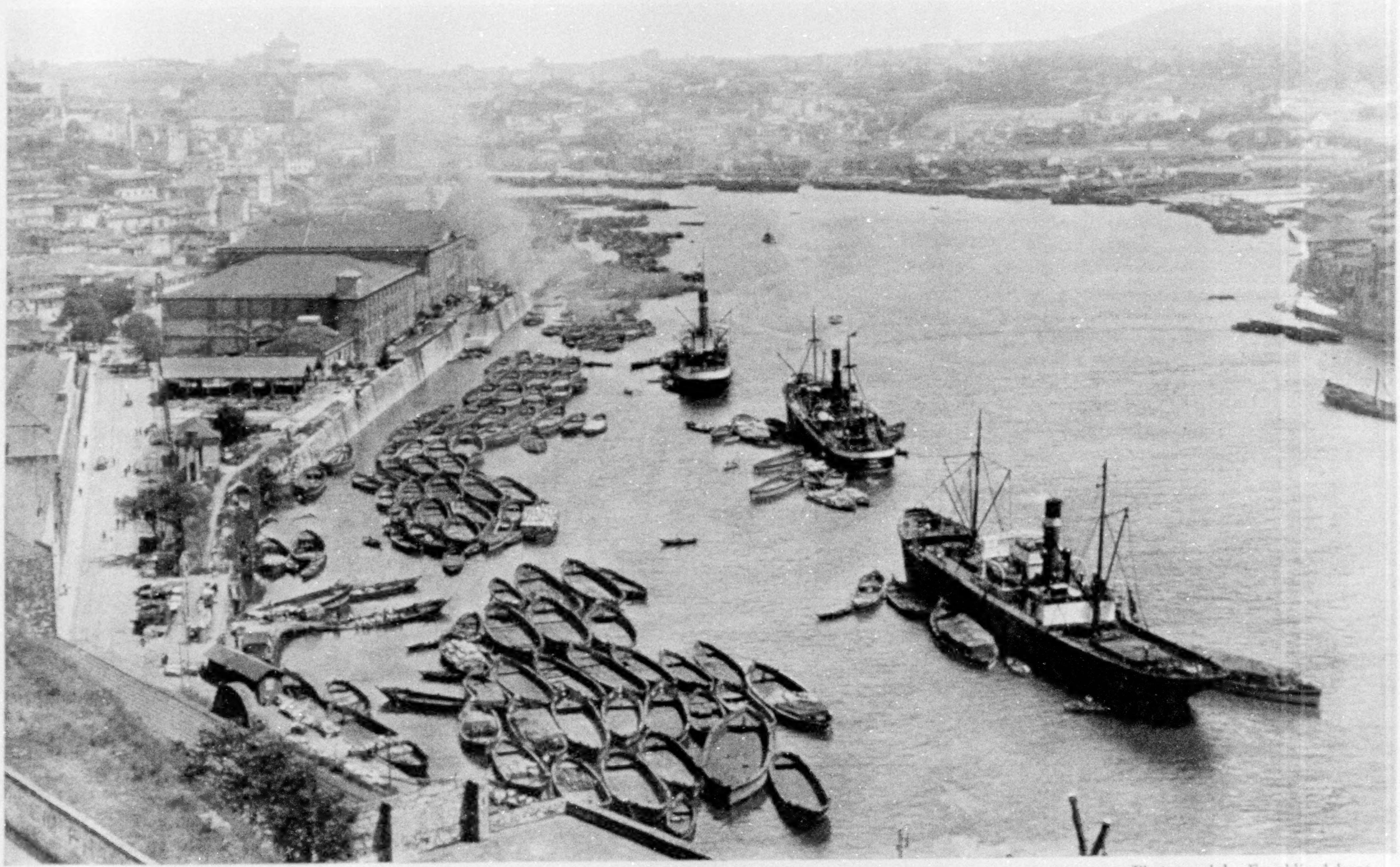
For about 25 cents a long, hard day, these girls run back and forth, working the swinging handle of this guillotinelike water pump near Aveiro, Portugal.



Photograph by Franklin Adams

LACE NEEDLES LIKE XYLOPHONE STICKS

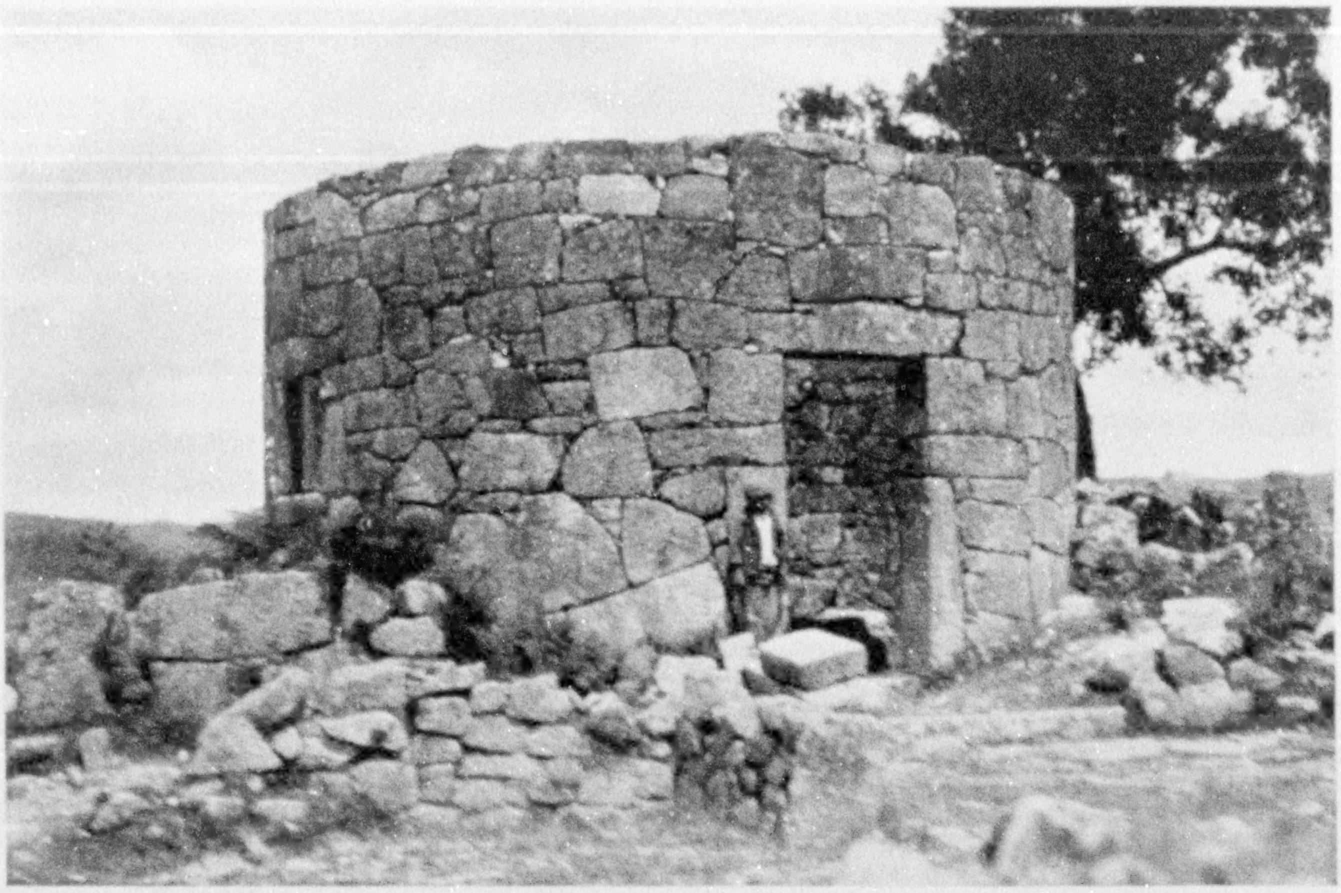
Maids of the Minho are clever at making "pillow lace." This art has long been practiced by the wives and daughters of Portuguese fishermen.



Photograph by Franklin Adams

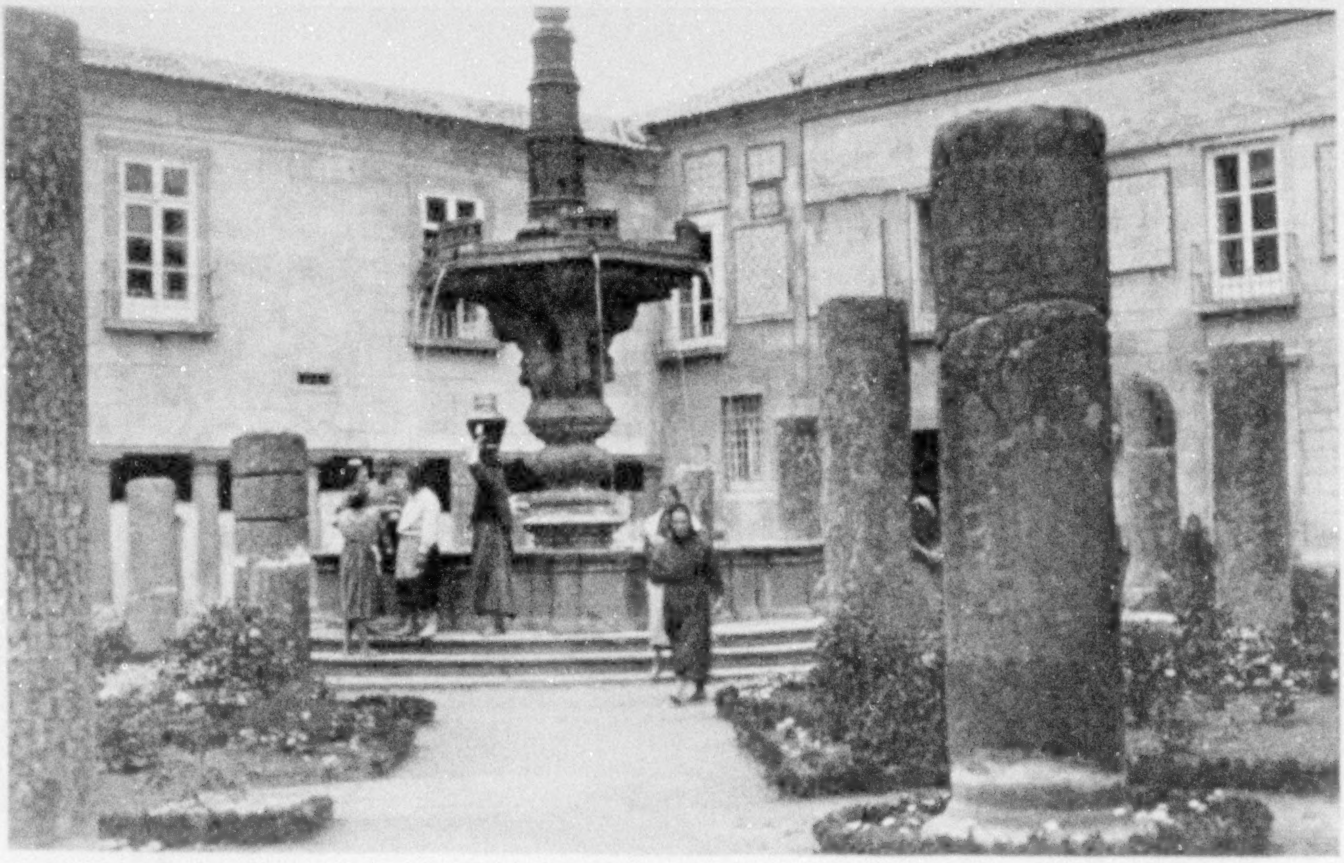
OPORTO, ON THE DOURO, IS THE BUSIEST CITY IN PORTUGAL

Lisbon is easy-going. In Oporto everybody works. A large group of foreign traders is settled here. English wine merchants have operated at Oporto since the 17th century. To the north lies a vineyard country, with granite terraces centuries old. The peasants are thrifty and well-to-do, yet they use the same plows and farm implements one sees carved upon the Celtic stones of Citánia.



FOR COUNTLESS YEARS MAN HAS LIVED IN THIS NOOK OF EUROPE

Portugal is strewn with the relics of ancient and prehistoric civilizations. This circular stone hut, as restored, shows the type of house common to Citânia, the best preserved Celtiberian ruins in the Iberian peninsula.



Photographs by Franklin Adams

NERO FIDDLED, BUT SOME OF HIS SUBJECTS WERE GOOD BUILDERS

Roman paved roads were built from Portugal into Rome, Spain, and France. At Braga, where Phœnicians, Greeks, and Carthaginians had preceded them, the Romans built a fine provincial capital for Roman Lusitania.

from the heights looking down on the granite gorge of the Douro. A third, from the Ribeira, or river road, has an unbelievably picturesque background of steep streets and tall, narrow houses with projecting gables and colored tile façades.

Built into the wall at the foot of the cliff are all manner of little booths patronized by longshoremen. The river road, which is always thronged, is the photographer's Mecca. Here are the bullock carts awaiting their loads; here the human carriers, men bearing burdens in boat-shaped baskets on their shoulders and women carrying everything imaginable on their heads, from a load of slate slabs or a basket piled high with codfish to a baby asleep in a cradle. The load is balanced on a little circular pad resembling a hard pincushion.

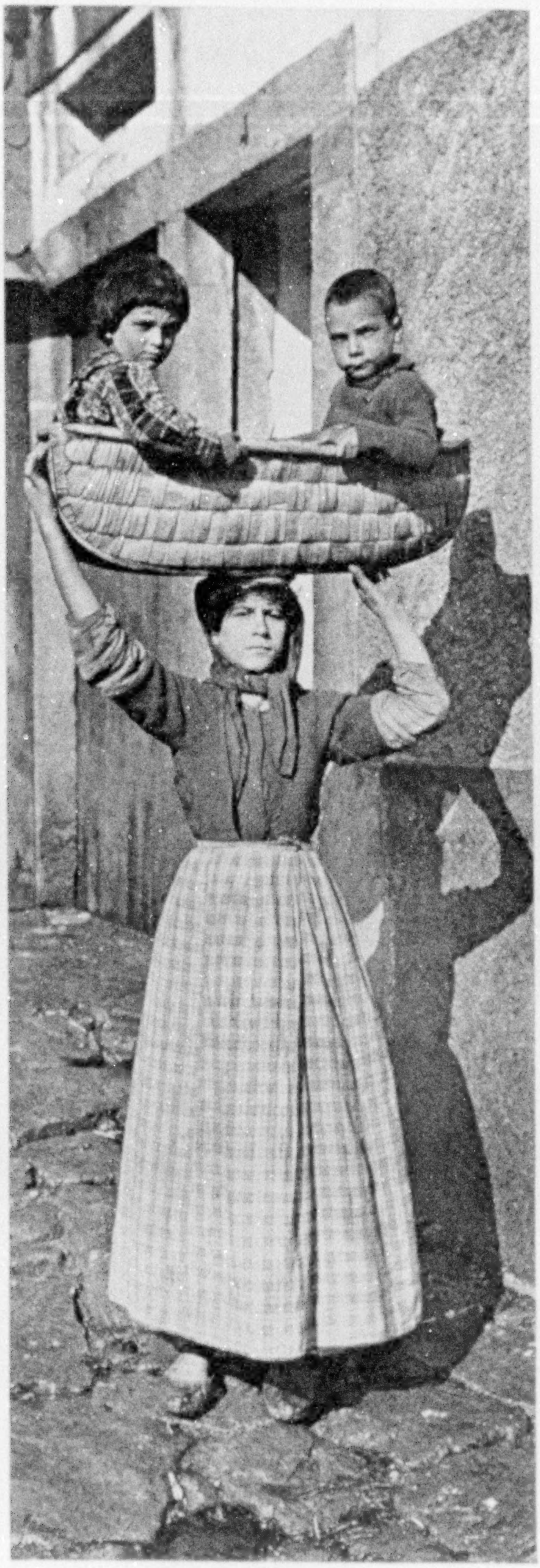
Oporto is building a new municipal center, an oblong open space flanked by tall stone buildings rivaling those in Lisbon.

THE OXCART HOLDS ITS OWN IN OPORTO

In the capital the oxcart has practically disappeared, but in Oporto it holds its own beside the automobile and the electric tram. The "singing carts" of the country, whose creaking is heard from afar, are unknown in the cities, where such sounds are unlawful, and the wheels are kept well oiled.

On street corners are women selling freshly boiled shellfish, which are as popular as peanuts with us. The bright handkerchief worn over the woman's head in the Minho is here replaced by a small, flat, circular, black velvet hat. Men, with baskets slung from the ends of poles, trot the streets, selling fruit and vegetables.

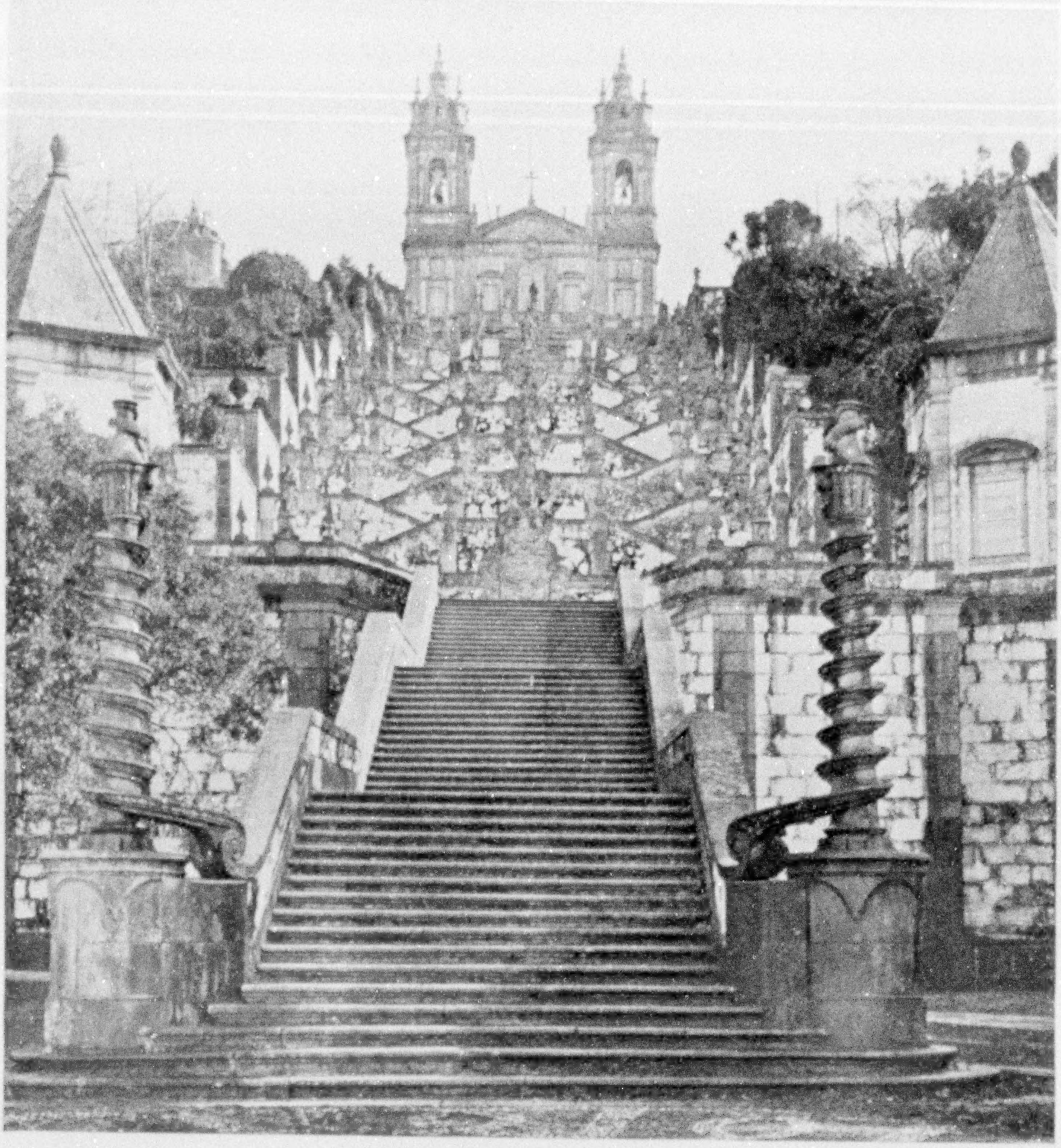
I never tired of looking from our hotel balcony into the narrow street below. It was a gay little thoroughfare with plants at every window and great beauty of contour in its uneven roofs. A peddler crying his wares led a donkey laden pannier-wise with miniature casks of gasoline, kerosene, olive oil, vinegar, and rum, each with a metal faucet. Out came a girl with a tiny cup and purchased its fill of kerosene. This unique vender was followed by a mounted policeman on a superb Arab horse just in time to settle a dispute



Photograph by A. W. Cutler

MOSES CRUISED IN ONE LIKE THIS

An aërial baby boat of Oporto, used also as a market basket. Exciting for baby at the take-off and landing—and risky should he go into a side-slip or a tail-spin.



Photograph by A. W. Cutler

THE SHRINE OF BOM JESUS NEAR BRAGA, PORTUGAL

As Moslems go to Mecca, so every pious Portuguese peasant seeks at least once in his life to visit this shrine. Some climb the flight of stone steps on hands and knees. The less devout may ascend by an inclined tramway. A *Romaria*, or pilgrimage and holiday combined, brings crowds of country people here in summer (see text, page 571). After the church service and religious procession follow three days and nights of feasting, singing, and dancing, which furnish recreation and refreshment for the toilers of the fields.

between the driver of an automobile and the iceman walking beside his oxcart. The street was not wide enough for them both.

In every doorway was a cat, black being the fashionable color.

"Dogs are scarce here," said an Oporto merchant. "Your best chance to see one is at the zoölogical gardens."

The bookstore on the corner was a favorite resort of mine. Here one night I met a barefoot woman, with milk cans on her head, purchasing a primer. She walked away happy with the little book of A-B-C's. Her small son is to learn to read and write and will wear shoes. Her home is a back room in a garret, but I am sure she owns a potted geranium and undoubtedly a cat.

The homes of the middle class are one-floor apartments in tall downtown houses, but the wealthy citizens live in the suburbs, where their rather ornate homes are half hidden behind trees and flowering shrubs, the gardens enclosed within high stone walls.

In no other city of my acquaintance save Rio de Janeiro is there such a satisfactory sight-seeing tram system. Twenty different lines come into the Praça da Liberdade. Each car bears a number and a little book with a map gives its itinerary. You can ride to the river's mouth, up the coast to Leixões, where the ocean liners dock, and back to town through the residential section, or across the bridge over the Douro to Villa Nova de Gaia.

There are shopwindows filled with the attractive gold and silver filigree jewelry manufactured in and near Oporto. The finest example of the silversmith's art is in a chapel of the old cathedral where the altar, tabernacle, reredos, and plate are entirely of silver, a century's work of Portuguese artists.

Passengers bound south for Lisbon, or east, up the Douro River Valley, to Salamanca, Spain, change cars in Oporto. The inner walls of the railroad station are covered with historic paintings in blue and white glazed tiles.

To follow these pictures in sequence is to know the outstanding events in the city's varied history, through Roman and Visigothic rule down to that red-letter day, in 1386, when King João I rode through the northern gate beside his fair English bride, Philippa of Lancaster, daughter of John of Gaunt. A warm friendship, exemplified during the World War, has ever since existed between England and Portugal. Among the five sons born to João and Philippa was the Prince known as Henry the Navigator.*

WHERE COLUMBUS STUDIED NAVIGATION

Christopher Columbus studied navigation in Oporto, on his way from Spanish Galicia, where his boyhood was spent, to Lisbon; but he was little known in those days and is not in the tile pictures.

The "Factory"—half institute, half club—is the British center, in the oldest part of the city, on a street known as "The Road of the Englishmen," before it was renamed in honor of a national hero. Very solidly built, a relic of the good old days when port wine was at its zenith, the Factory is a fortress of British customs and hospitality.

The vines which produce the port-wine grapes are not grown near Oporto, but about 60 miles up the Douro Valley.

The sailing boats which bring the barrels of wine downstream to warehouses in Villa Nova de Gaia are flat-bottomed, to pass over shoals and around sandbars. They are most picturesque, with a spoon-shaped prow and one huge, square sail, bellying in the wind like those used on the earliest type of Phœnician craft. Bound upstream, long, heavy poles are employed, progress against the current being achieved by main strength.

Besides the wine carriers on the lower Douro are gondolalike boats with graceful lateen sails, an inheritance from the Moors; and narrow boats, high in prow and stern, like the ancient Grecian galleys. A book could be written on the strange craft to be seen in Portuguese waters.

THE WINE-GROWING AREA IS ZONED

We boarded the eastbound train up the Douro Valley to the Paiz do Vinho, or Wine Country. The Government has decreed that only a limited territory may bear this name.

The vines are grown on terraces, in a soil peculiar to the region, on steep hillsides bordering the Douro, and for some miles north and south in adjoining valleys. Each terrace has its strong retaining wall, built with stones taken from the soil. A tremendous amount of labor is required to construct the terraces and maintain them during the season of heavy rains. With the decline of the port-wine trade, many have been abandoned, bringing much poverty to the upper Douro (see, also, Color Plate III).

The vines are grown as low bushes. In September and October the grapes are gathered in baskets, which men carry on their backs by means of a strap around the head, and are brought down from terrace to terrace to the wine presses at the foot of the hill, where they are put into granite vats.

Working in relays, the men press out the juice with their bare feet, each man's hands on the shoulders of his neighbor

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* See, also, "The Pathfinder of the East," by J. R. Hildebrand, in this issue of the NATIONAL GEOGRAPHIC MAGAZINE.

Photograph by A. W. Cutler

SPINNING WHILE SHE YARNS

Before many a peasant home in Portugal, distaff in hand, one sees fine-faced old women gossiping while they spin flax. In spite of political revolution, Portugal has as yet known no industrial revolution.

to keep his balance. They sing as they tread, drum and accordion enlivening the march. In the vats the juice ferments and the following spring it is poured into oak casks and loaded into downriver boats. The wine is fortified with native brandy before becoming genuine port.

THE PROVINCE "BEHIND THE MOUNTAINS"

From Regua, on the Douro River, in the heart of the Paiz do Vinho, a branch railway runs north into the mountain province of Traz-os-Montes (Behind the Mountains), with its celebrated mineral springs. In Portuguese Africa and Portuguese Asia we had made the acquaintance of bottled water from these springs.

This region is the coldest part of Portugal, with snow in winter. There are magnificent forests of oak and chestnuts. Wolves and wildcats are found here and the wild boar is hunted in the autumn. Strong mules, fattened on the rich grass, are sold across the frontier in Spain, later to be reëxported from Spain into England.

We made a pilgrimage to the village of Sabrosa, among these mountains, where in the latter part of the fifteenth century, Fernão da Magalhães, known to the English-speaking world as Ferdinand Magellan, was born.

Very near the Spanish frontier lies the old city of Bragança. Quaint peasant costumes are still to be seen in this part of the country, even an occasional cape of thatched straw to keep out the rain (see illustration, page 579).

Returning to Oporto, we journeyed up the coast to the sea-bathing resort of Villa do Conde, where a well-preserved Roman aqueduct strides the valley.

There are three natural geographical divisions in Portugal: from the Minho River to the Douro; from the Douro to the Tagus; from the Tagus south.

Portugal-in-Europe has 6,000,000 inhabitants in a territory a little larger than the State of Maine, the densest population being found north of the Douro River.

Portugal, including the colonies in Africa, Asia, and the East Indies and the Azores and Madeira groups of islands in the Atlantic, has about 15,000,000 inhabitants in a territory a little less than one-third the size of the United States. This is all that remains of former vast holdings.

If we add the population of Portugal and its colonies to that of Brazil, there are 46,000,000 people on earth to whom Portuguese is the official tongue.

The nine Azorean islands and the three of the Madeira group, spoken of as "The Islands Adjacent,"* are closely united politically with the mainland. They send fruit, vegetables, butter, cheese, and wicker furniture to Lisbon.

PORTUGAL'S COLONIES RICH IN PRODUCTS

Cacao, coffee, rubber, sugar, hides, vegetable oils, and ivory come from the African colonies; coconuts, spices, cashew nuts, and copra from Portuguese India; coffee, sandalwood, and wax from the East Indies; and silks and porcelains from Macao, in China, the oldest European settlement in the Far East. Cacao, coffee, and rubber are reëxported from Lisbon with the canned sardines, wine, cork, olive oil, hides, timber, and fruit produced in Portugal.

Photograph by Franklin Adams

ONLY STIFF-NECKED WOMEN NEED APPLY

This handsome person is unloading slabs of slate on the Oporto river front. Doing "headwork" like this, and infinite other labor, has made the Portuguese peasant woman an Amazon of strength and endurance (see, also, illustration, page 576).

South of the Douro the country changes in character. The small plots of cultivated land, owned by peasant farmers, are here replaced by larger holdings. There is less rain. In a corner of each field, on a raised platform of earth and stone, plods a patient donkey, blindfolded. Round and round he goes, turning the wheel which raises water from the well and sends it into the irrigating canals.

HOW SILT FORMED A PORTUGUESE HOLLAND

Near Aveiro is a big lagoon connected with the sea. Some centuries ago Aveiro was a leading port on a fine bay, but the river Vouga, emptying into this bay,

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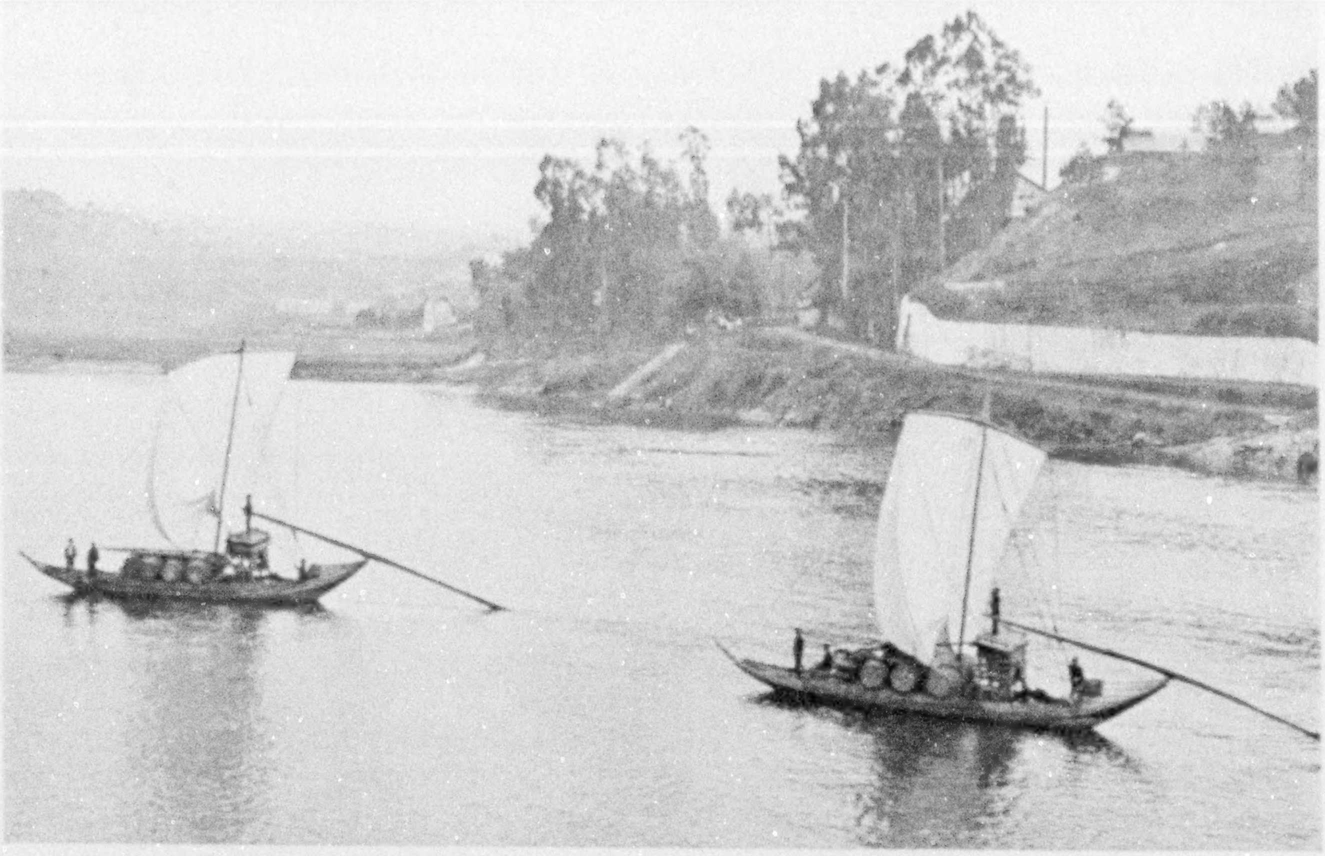
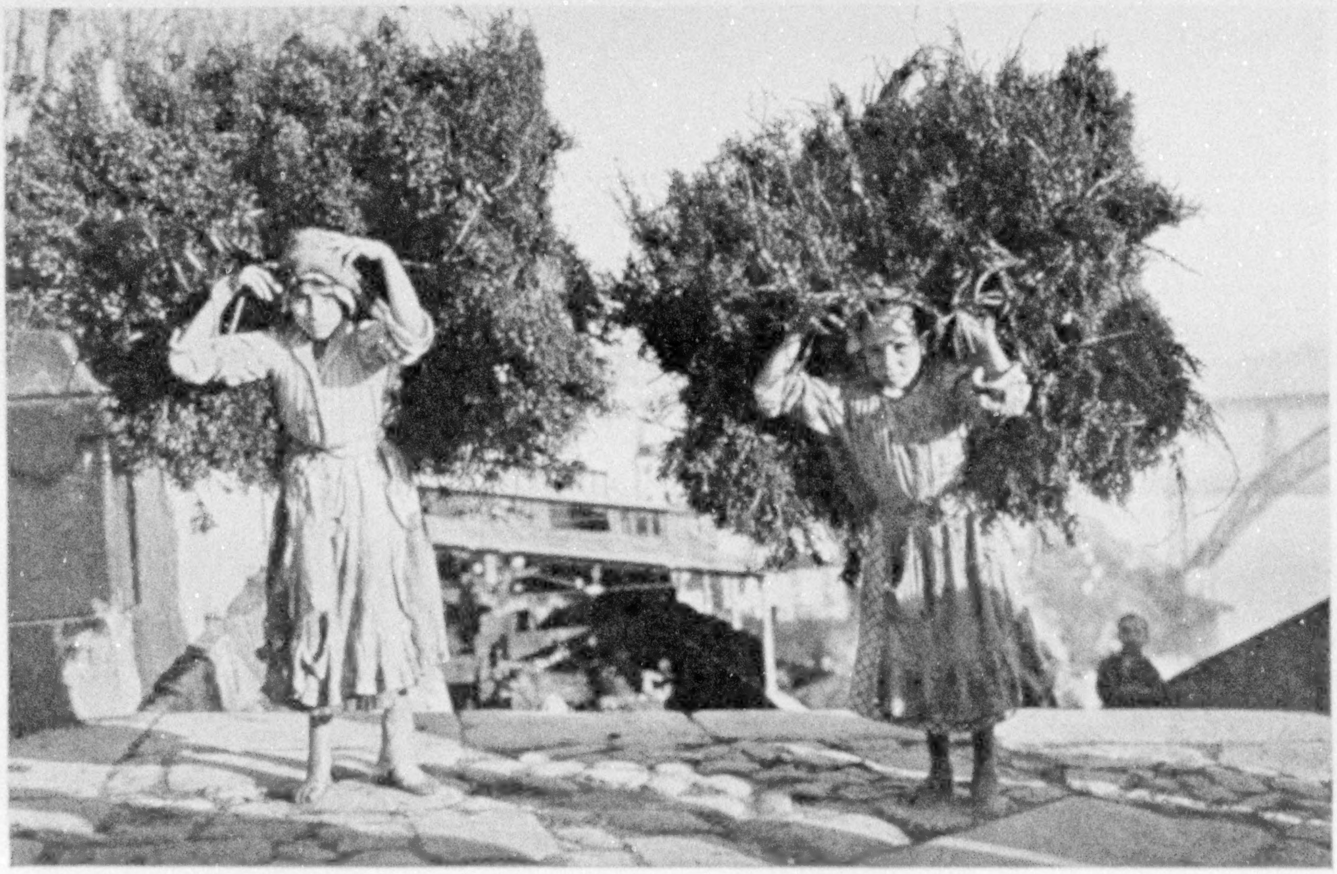
* See, also, "The Azores: Picturesque and Historic Half-Way House of American Transatlantic Aviators," by Arminius T. Haeberle, in the NATIONAL GEOGRAPHIC MAGAZINE for June, 1919, and "Madeira, on the Way to Italy," by David Fairchild, in the NATIONAL GEOGRAPHIC MAGAZINE for December, 1907.



PORT-WINE BOATS ON THE DOURO RIVER

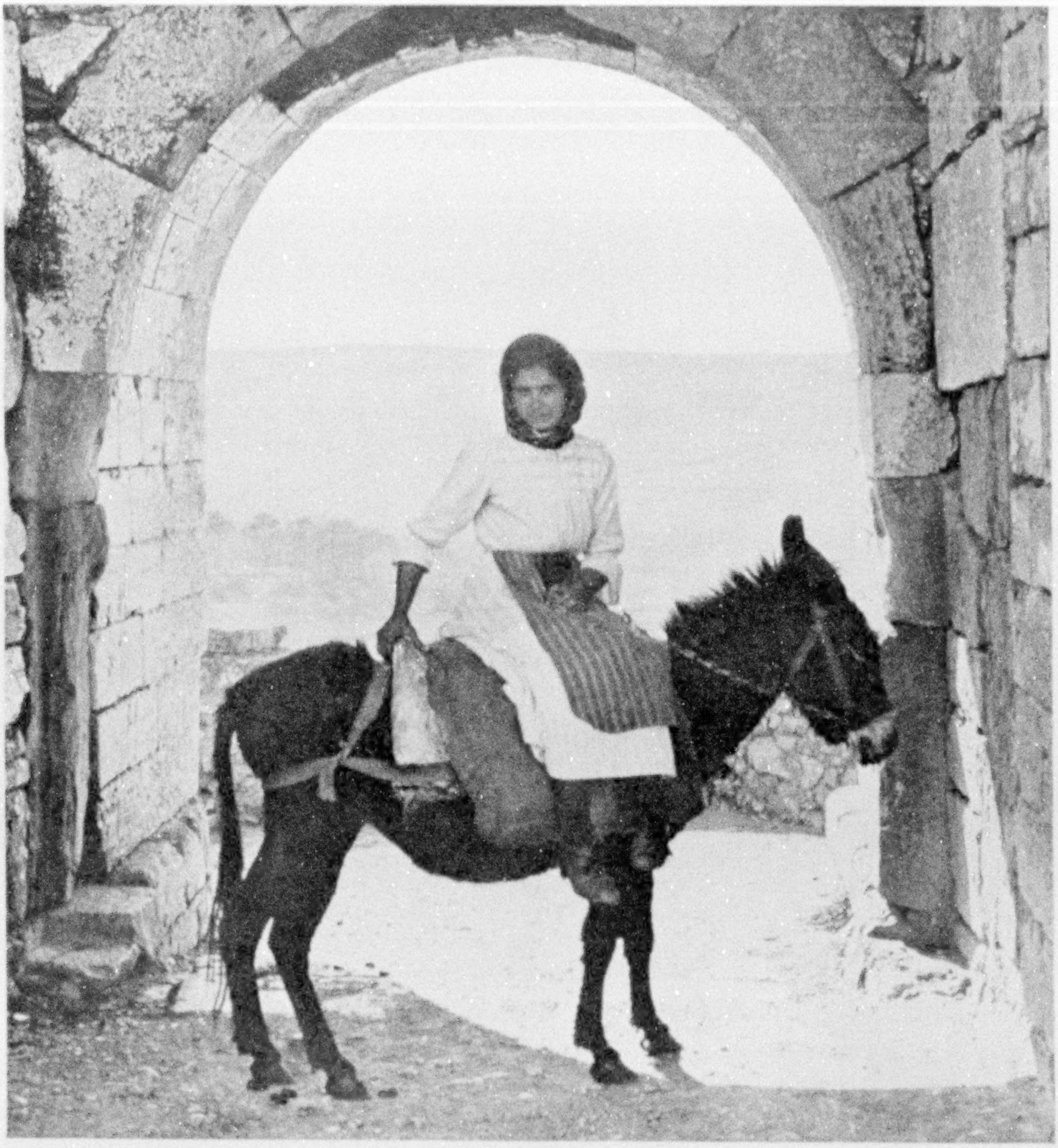
In good years Portugal makes more than 100 quarts of wine per person on nearly 440,000 acres of vineyard. For years grape culture was developed to the detriment of farming. Lately Brazil has become a heavy buyer of Portuguese red wines.



Photographs by A. W. Cutler

LIKE BIRNAM'S WALKING WOODS IN MACBETH

People living amid plenty of coal and oil often forget that in parts of Europe and the Far East millions of mankind scour the fields for brush and even use bundles of grass for fuel. These Portuguese girls are carrying brushwood for a baker's oven.



Photograph by A. W. Cutler

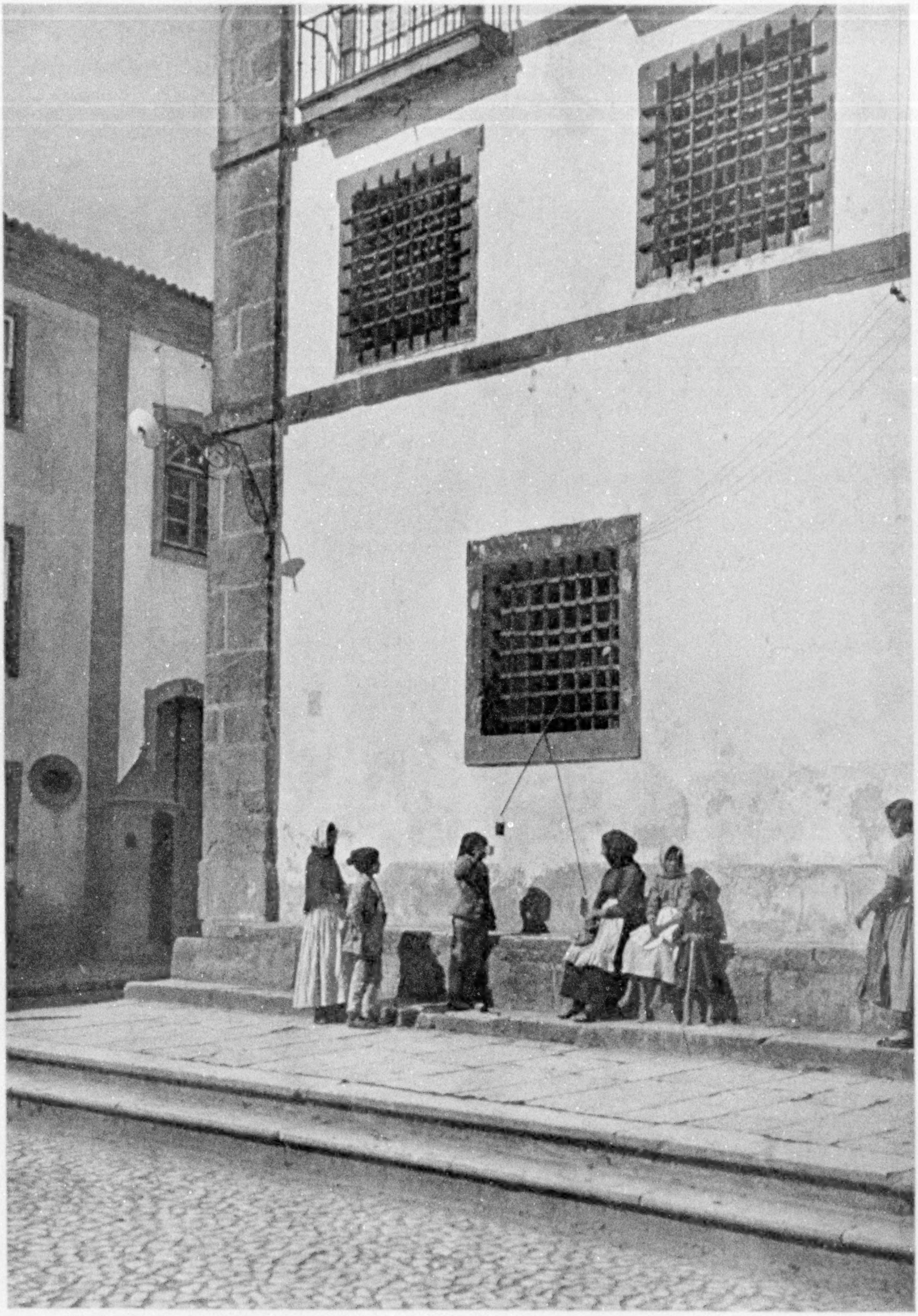
A DONKEY AND A DAME IN A VERY OLD FRAME

brought down so much silt that sandbars formed across the mouth of the harbor. The lagoon thus created became blocked with islets separated by narrow channels. In this Portuguese Holland the aquatic vegetation is most brilliant. Timber and salt are exported from Aveiro, and in the surrounding marshes rice is grown (see, also, Color Plate V).

A beauty spot of Portugal is Bussaco, a natural forest from 1,300 to 1,700 feet above the sea. It is said that early Christians when persecuted fled to its caves; since the fourth century priestly men have here found a haven; for 200 years Carmelite hermit monks made this their refuge.

A MUSEUM OF LIVING TREES

Two papal bulls issued in the seventeenth century, still to be seen on one of the ten gates, decreed excommunication to any women entering these grounds, or to any person daring to destroy a plant or tree of this sacred wood. So the old trees stood, and to the natural forest of pines, corks, and chestnuts were added flora from America, Africa, and Asia. Palms, carobs, and camphor trees, firs, acacias, and plane trees, giant cedars of



Photograph by A. W. Cutler

JAIL LIFE IN PORTUGAL HAS ITS FISHING MOMENTS

As in Mexico, so in Portugal, the "carcel," or jail, often faces the street. Then prisoners lucky or influential enough to get a ground floor front room may visit freely with people in the street, talking through the bars. Food, tobacco, and books are easily passed in to them. Here a boy is seen putting food in a can for a friend or relative behind the bars of the jail at Thomar.

Lebanon, Himalayan deodars and Japanese cryptomerias, grow side by side.

There also are oranges, lemons, and magnolias, rosemary, lavender, and myrtle in these sweet-scented woods; 400 indigenous varieties have been listed, besides the many exotic trees and plants sent back by exploring missionaries. The Lusitanian cypress, king of the forest, is said to have come originally from Mexico.

When the monks were banished, nearly a century ago, the forest became the property of the State and a royal summer palace was erected beside the humble monastery. On the downfall of the monarchy this palace became a hotel.

The builders copied the style of architecture known as Manoeline, conceived in the days of Portugal's glory and named in honor of King Manoel the Fortunate, in whose reign the Portuguese colonies in the Far East were won and untold riches brought back to the motherland. It was then that architects commemorated in their buildings the nation's great naval feats.

The stone used was soft white limestone, lending itself to intricate carving, hardening and turning golden with age. The effect from a distance is of lacework; but on closer scrutiny the story of Portuguese navigation is unfolded in Saracenic arches, Asian temples, laden elephants; in enormous cables, knotted cords, and dolphins of the sea; in the Maltese cross of the Order of Christ which sponsored those early voyages.

A song in stone of Portugal's greatness, this Manoeline architecture is seen at its best farther south, in magnificent churches and monasteries built centuries ago. Distinctly a national development, its counterpart is found nowhere else on earth.

A sylvan path leads up the Via Sacra of the barefoot Carmelites to chapels and hermitages, half hidden among the trees, and on to the heights where a magnificent panorama is unfolded.

The geographical reason why Portugal has such luxuriant flora just at this latitude, while Spain is arid, comes home when one looks from the verdure all about to the distant frontier mountains. The moisture-laden winds from the Atlantic, meeting this chilly barrier, are forced back to the west and fall in torrential rains. These high mountains and the broad rivers north and south, which form the boundary between the two Iberian countries, have served to keep them separated politically for the greater period of their history.

Just outside the Bussaco forest wall is the famous "Iron Ridge," where, September 27, 1810, Wellington won his great victory over Masséna.

A monument marks the battle's site. The night after his victory Wellington slept in the little Carmelite monastery in the forest.

COIMBRA IS THE ATHENS OF LUSITANIA

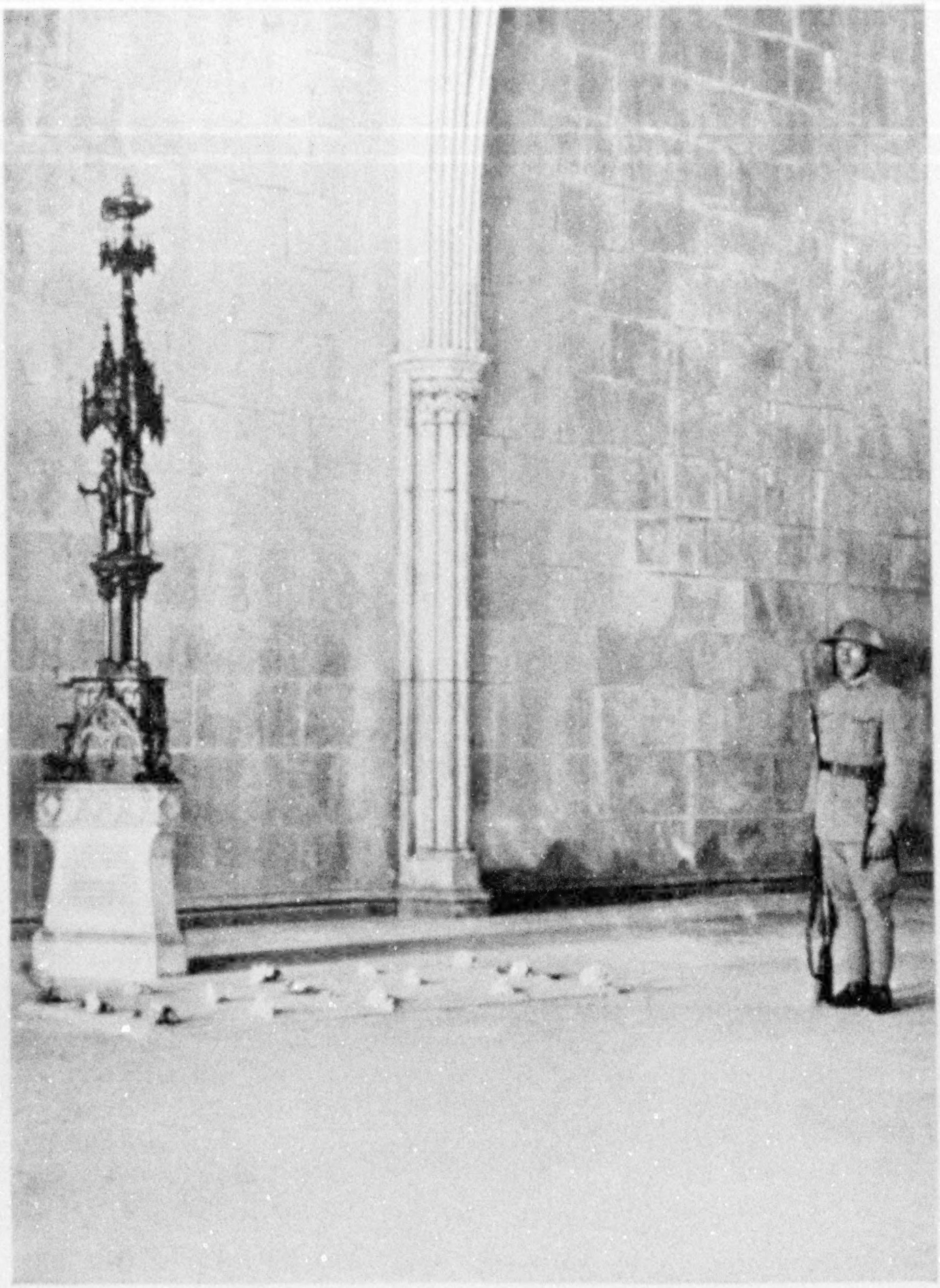
Coimbra, the classic city of Portugal, once the capital, for centuries the seat of learning, is built on a hill beside the Mondego River. This is the only one of five important streams of Portugal whose source lies within the country. The other four are Spanish-born rivers flowing to the Atlantic, navigable only in Portugal. Tree and grass bordered, slow-moving, lovely beyond words, is the Mondego, born up among the Mountains of the Stars.

Coimbra disputes with Braga the third place of importance among Portuguese cities. Generation after generation, its university has been the goal of all intellectual young men of the Portuguese-speaking world. The students wear a distinctive costume, black throughout, with a long, flowing cape, and they go bareheaded. The purest Portuguese, it is said, is spoken in and around Coimbra (see, also, Color Plate II).

The immortal Camoëns, who wrote "The Lusiad," epic poem of Portugal's greatness, was a student here; was probably born here, although this is unproven.

The Sé Velha, old Romanesque cathedral of Coimbra, hill fortress and temple combined, is probably the finest church in all Portugal. In Santa Cruz, another of the many noble old churches, is the tomb of Affonso Henriques.

In Coimbra I was awakened very early one morning by a great commotion in the street below. Running to the window, which overlooked the river road, I saw a long stream of country people with their animals coming to the town market.



Photograph by Gervais Courtellemont

THE TOMB OF PORTUGAL'S UNKNOWN SOLDIER

Commemorating their victory over the Spaniards in 1385, the Portuguese built the "Battle Abbey," or Church of Santa Maria and its monastery, at Batalha. Among other tombs is that of the unknown Portuguese soldier from the World War (see text, p. 597).

Probably as many as 6,000 people were in the open market place that day—a laughing, good-natured crowd. There was no shouting or quarreling. The animals on sale—oxen, horses, mules, donkeys, pigs, goats, and sheep—were in different sections. In Portugal goats and sheep flock together.

Under awnings stood innumerable counters, with all sorts of cheap trinkets. The vegetable and fruit sellers occupied several squares. The country around Coimbra is known as "The Fruit Basket." I saw piles of apples, melons, pears, figs, oranges, and white grapes.

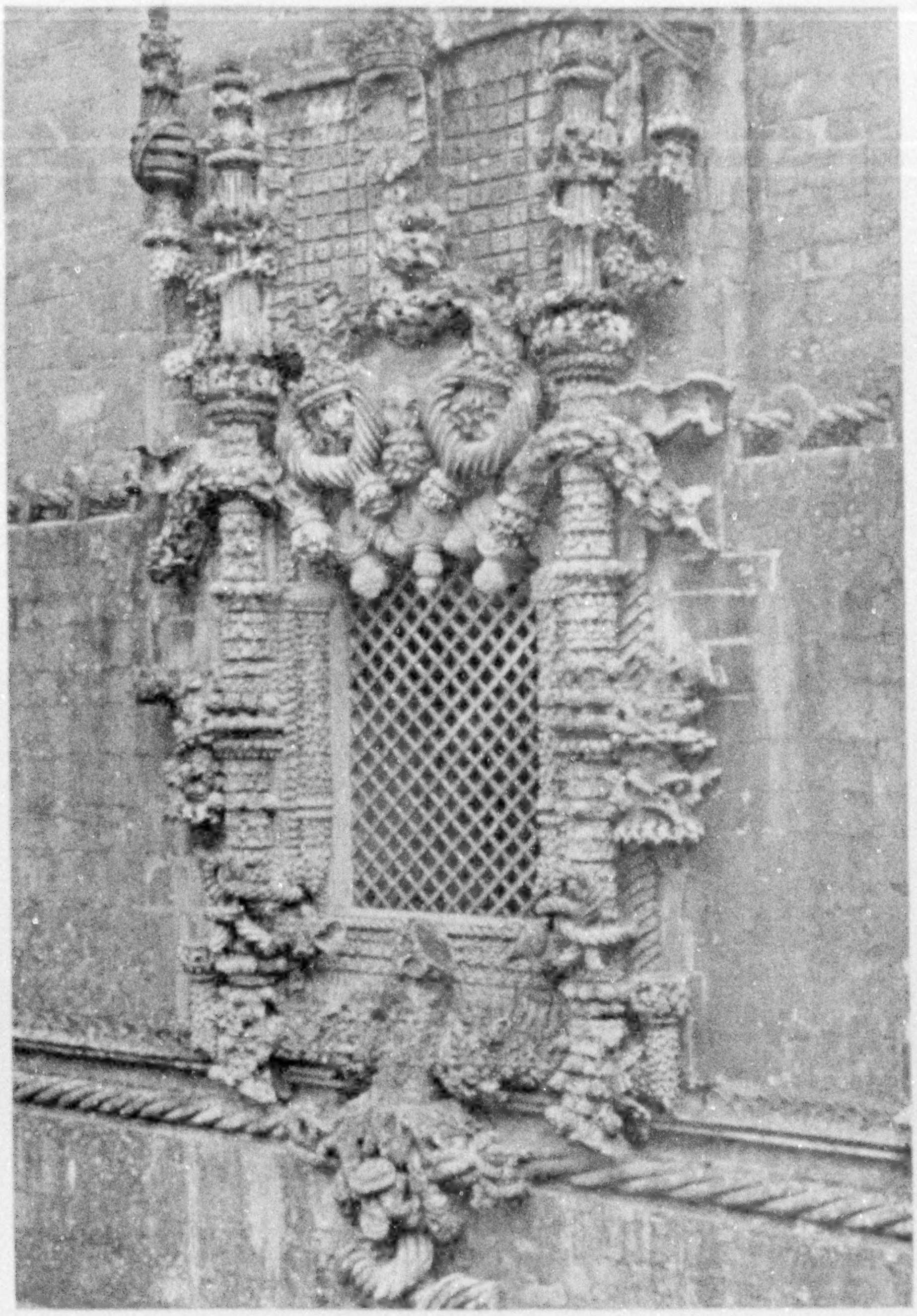
Between Coimbra and Lisbon there is much of interest. Leiria is worth a visit because of its quaint charm, picturesque people, and castle on the hill (see, also, Color Plate VII). Batalha is, after the Alhambra, the noblest building in the Peninsula; Thomar is beautifully situated and is associated with the Knights Templar, Order of Christ, and Prince Henry the Navigator.

VISITING THE LAND OF CASTLES

This is the Land of Castles. I visited 45 old strongholds, some vast and imposing, nearly all in an excellent state of preservation. They differ in architecture from the ancient fortresses of other European countries, everything Portuguese seeming to have a distinctive character. Square towers and crenelated walls are much in evidence. There are citadels of the Romans, the Visigoths, and the Moors, but finest of all are those castles built, often on old foundations, by the Christian warriors of the Middle Ages, and after the Period of Discoveries, when new enemies threatened the country by sea.

At Leiria, by the river Liz, an isolated hill rises abruptly from the plain. On its summit perches a castle won from the Moslems by Affonso Henriques and rebuilt by King Diniz.

Dom Diniz, 1279-1325, stands out as an agriculturist. It was he who brought sea-pines from southern France and planted them all along this part of the coast to prevent further encroachment



Photograph by A. W. Cutler

AN ORNATE WINDOW OF THE 12TH CENTURY

Travelers come miles to see this famous window in the Convento de Christo at Thomar. Henry the Navigator was long Grand Master of the Order of Christ. In Thomar, too, is the Church of Santa Maria dos Olivales, old church of the Templars.

by sand-dunes. From these trees turpentine is obtained.

The fountain at Leiria, where the girls fill their terra cotta water jars, is a never-to-be-forgotten picture. These slender-necked vessels are graceful in shape, like the amphoræ of old. They are tilted coquettishly on one side of the head when empty; balanced erect when full. The largest when laden must weigh at least 40 pounds.

From Leiria we drove through a smiling country of cornfields and vineyards to Batalha. To lovers of horses, it seemed good to find a magnificent span left in this motor-mad world.

I saw a green bough over the doorway of a road house, the ancient sign that wine is for sale. "Good wine needs no bush," the old saying ran.

The Church of Santa Maria da Victoria and the adjoining monastery, known as Batalha (Battle), was built to commemorate a great Portuguese victory over the Spaniards in 1385. The battle, begun in this hollow among the hills, ended on the near-by plateau of Aljubarrota and secured Portugal's independence.

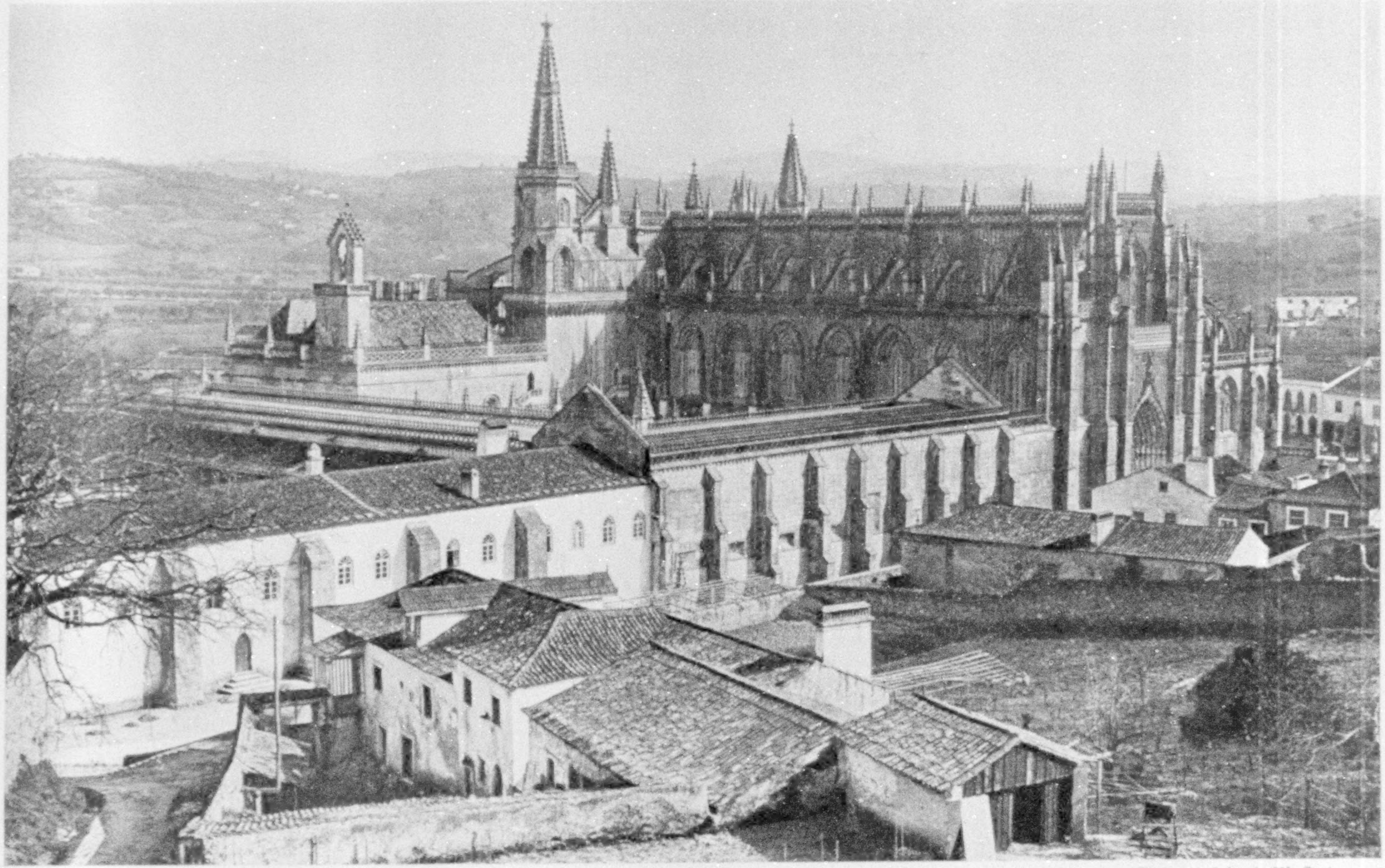
They tell a story about the baker's wife of Aljubarrota, who killed seven Castilian soldiers with her long oven shovel. "As full of the devil as the baker's wife of Aljubarrota" is a popular saying.

The Battle Abbey of Batalha, as large as the cathedrals of Paris, Toledo, and Cologne, is one of the most beautiful Gothic structures in the world. Near the main entrance is the Chapel of the Founder, where João I and Philippa and four of their five sons lie, among them Prince Henry the Navigator. The eldest son, Duarte (Edward), who succeeded his father, lies with his queen near the high altar of the church.

In the hidden places of Batalha's golden, ruby, and russet walls, roofed by a cobalt sky, hundreds of swallows make their homes.

WHERE PORTUGAL'S "UNKNOWN SOLDIER" LIES

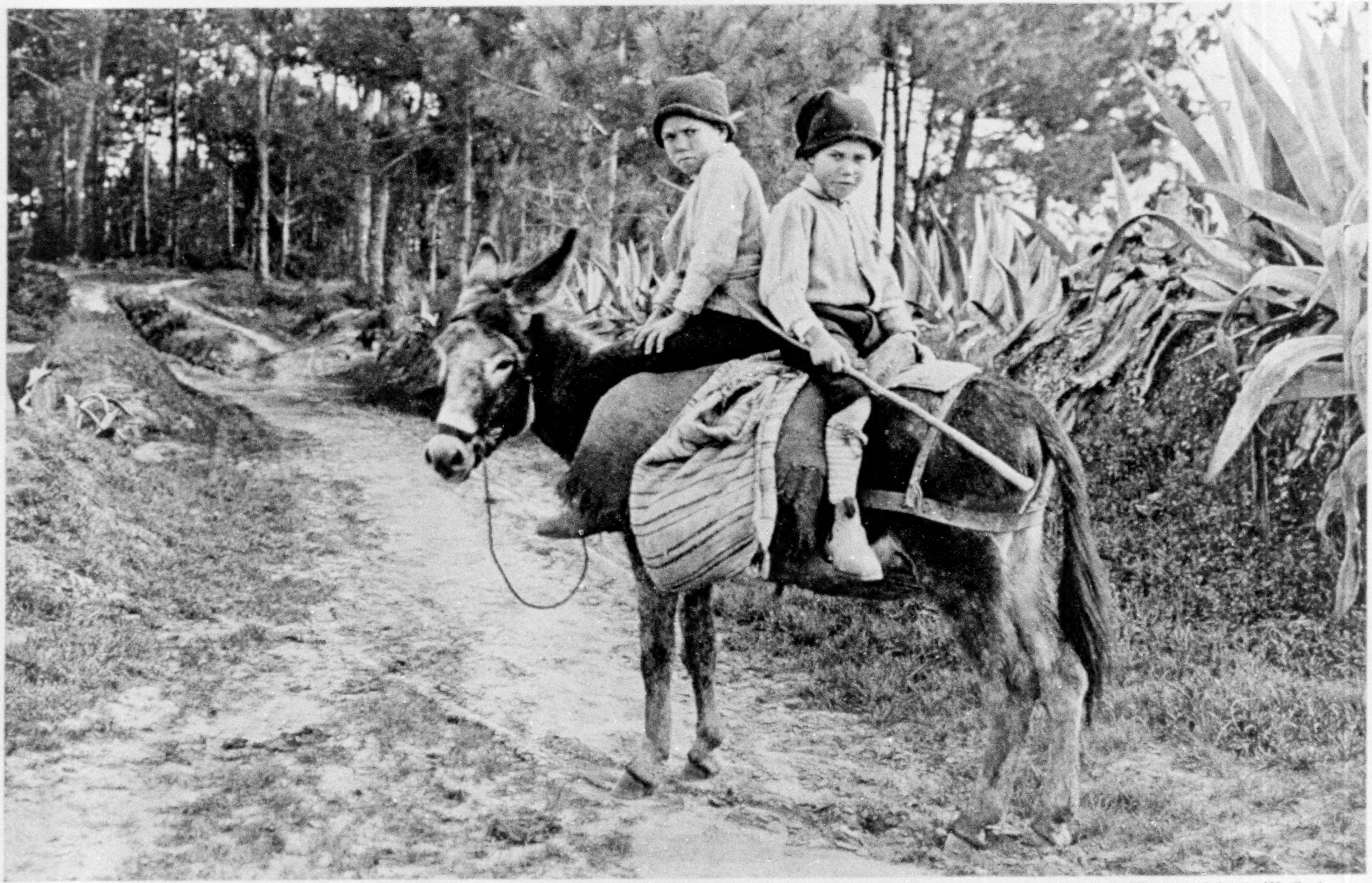
In the Chapter House, whose bold, vaulted roof is unsupported by pillars, is the floor tomb of the Unknown Soldier of the World War. There are freshly cut flowers on the stone slab; beside it a



Photograph by A. W. Cutler

THE "BATTLE ABBEY" OF PORTUGAL

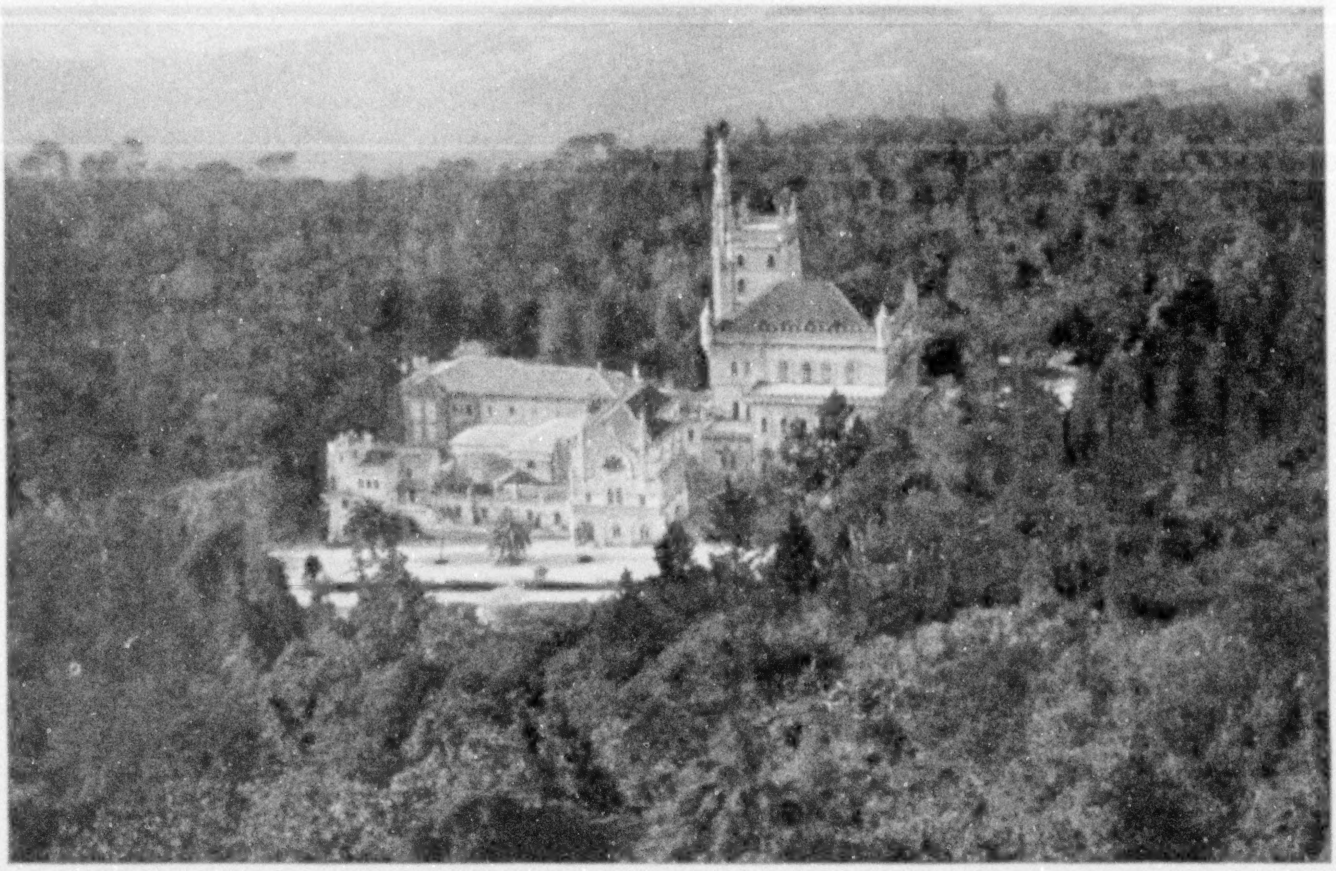
Long ago this magnificent building stood pleasantly alone, amid a forest. Now a straggling village has encroached upon it. This "Battle Abbey" at Batalha consists of the Church of Santa Maria and the monastery adjoining. It was founded by João I and his English wife, Philippa, in 1388. After the Alhambra at Granada, it is said to be the most beautiful edifice on the peninsula. Prince Henry the Navigator is buried here.



Photograph by A. W. Cutler

RIDING BACKWARD, STICK IN HAND, TO ACCELERATE HIS LOW-SPEED MOTOR

"The short and simple animals of the poor," donkeys have been called. The black bag-caps of the Portuguese boys serve as a convenient catchall. In them may be carried everything, from money and marbles to live toads. Portuguese lads riding home from market near Caldas da Rainha, or "Hot Springs of the Queen."



Photograph by Franklin Adams

TO-DAY HOTELS ARE MORE POPULAR THAN MONASTERIES

Adjoining the old Carmelite monastery, in the green woods near Bussaco, stands the famous Palace Hotel, built for royalty. In it is found the picture of Alboquerque landing in India (see page 545).

soldier in war helmet is always on guard and a lamp is always burning.

We drove south from Batalha to the monastery of Alcobaça, formerly one of the largest in the world. Here mass was read without interruption day and night, 900 monks being employed in the service. In the center of the gigantic kitchen, now used as a barracks, flowed a stream where live fish awaited the frying pan.

Kings of the first dynasty are buried here. One of the many chapels contains the sarcophagi of Pedro I and his Inez de Castro. At Pedro's request the recumbent effigies were placed feet to feet, that his first sight on the Day of Resurrection might be that of his martyred wife.

From Alcobaça we drove across country to Thomar, which ranks with Batalha in interest.

More than any other building in Portugal, the hoary, gray citadel high above Thomar stands for that strength and steadfastness of purpose which made the fifteenth-century Portuguese masters of the seas.

We skirted the Tagus, more a gulf than a river. We did not recognize, in this wide, tawny tide, the clear, narrow stream, deep down in the cliffs, we had known in New Castile.

Lisbon is at the tip end of a peninsula bordered east and south by the Tagus, west by the Atlantic, and north by a semicircle of hills. Its magnificent river harbor and beauty of form and color have brought it world fame. The city occupies the floor of a valley, the steep cliffs on either side and the surrounding hills. From the heights there are many splendid views.*

We attended a bullfight, so unlike that of Spain. In Portugal the horses are not tortured and the bulls are not slain. Splendid horsemanship is the chief feature.

The entrance into the ring of the star rider, dressed in old-time court costume and mounted on the finest of Arab-Portuguese steeds, is worth seeing. The spectacular curveting of the horse is an inheritance from the showy Arab horsemanship in the days of Moslem rule. Skillful rider and superb mount go unscathed by the bull, whose horns are padded. The angry animal is finally permitted to trot off to freedom, led by a herd of tame cows.

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* See, also, "Lisbon, the City of the Friendly Bay," by Clifford Albion Tinker, in the NATIONAL GEOGRAPHIC MAGAZINE for November, 1922.

West from Lisbon stretches the iridescent, mountain-backed seacoast known as the Portuguese Riviera. Back from the coast and high up among the crags, overlooking sea, river, hill, and plain, is the Pena Palace, former summer home of royalty.

The monks who long had a hermitage on this eerie summit saw many historic ships sail in and out of the Tagus. In the spring of 1493 the sea-battered *Niña*, driven into the river haven by a storm, brought Christopher Columbus back from his first voyage to the Americas. Six years later Vasco da Gama sailed proudly up the Tagus, home from his first voyage around Africa to India.

Photograph by Franklin Adams

RAH! RAH! BOYS OF COIMBRA UNIVERSITY

Coimbra is one of the oldest of all seats of learning. In 1431 King John prescribed a ceremony for conferring degrees which is still in use. To Coimbra comes the flower of Portuguese youth, even from far-away Brazil (see text, page 595).

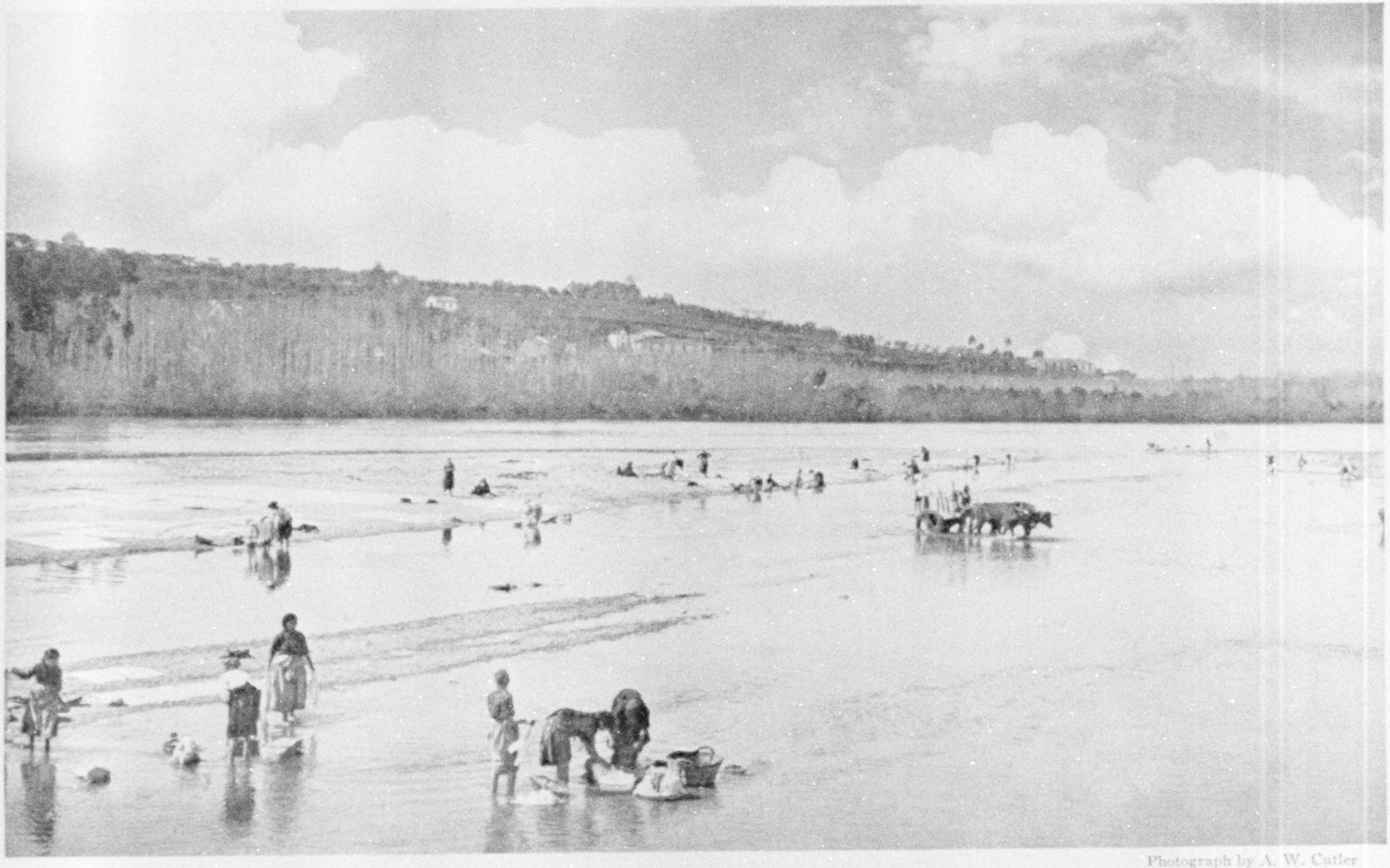
Below the magnificent palace are the ruins of an old Moorish castle, and in the hill-girt town of Cintra a third royal palace. Byron and Southey raised their golden voices in praise of pine-encircled Cintra's beauty and lure.

A SHRINE OF THE CONQUISTADORES

Every visitor to Lisbon goes to Cintra, and to Belem by the Tagus, a part of Greater Lisbon, to see the Tower of Belem (Bethlehem), which was on an island before the encroachment of the shore. In the shadow of this grand old tower, formerly a fort guarding the river entrance, many a gallant *conquistador* furled his sea-torn sails.

A little back from the river, in Belem, is the church of Santa Maria, with its adjoining monastery, built by King Manoel as a thanksgiving offering on Vasco da Gama's safe return. It was erected on the site of a little chapel where seamen of Prince Henry's day came, on the eve of departure, to pray for fair seas. In this noble church are the tombs of King Manoel, Vasco da Gama, Camoëns, and other illustrious Portuguese.

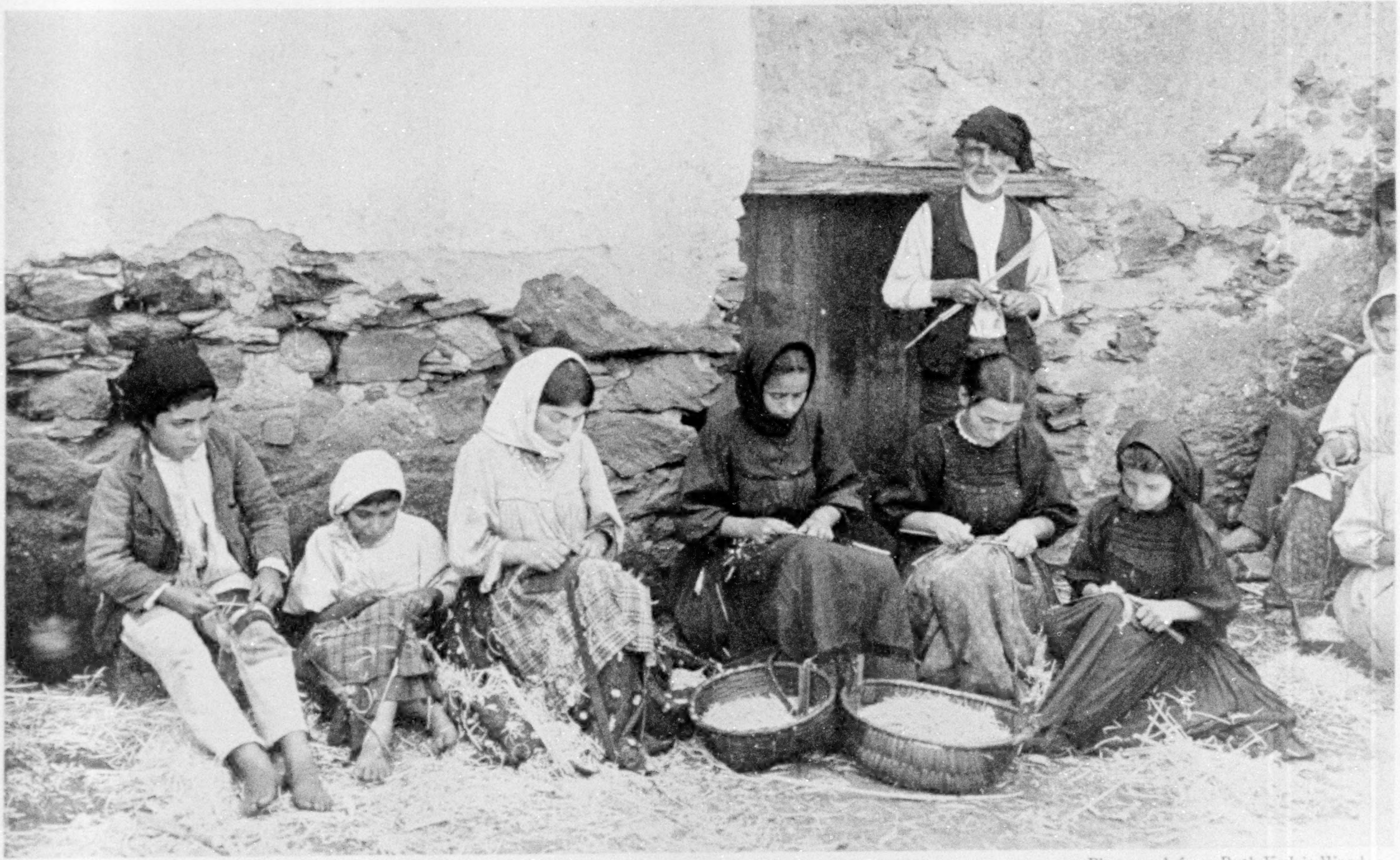
South of the Tagus lies the province of Alemtejo (the Other Side of the Tagus).



Photograph by A. W. Cutler

RIVERS SERVE AS WASHTUBS FOR THE WORLD

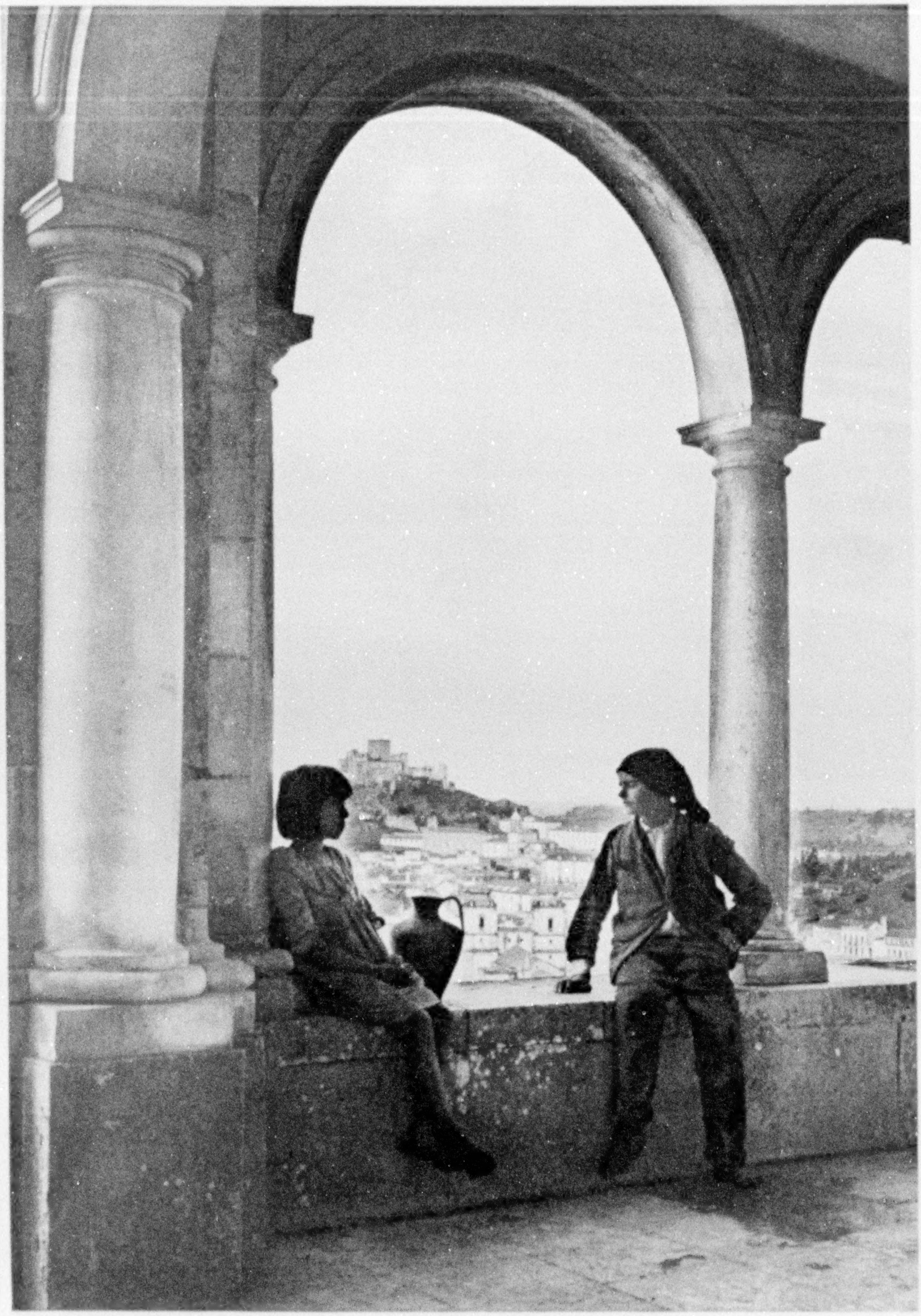
Here fish know the taste of soapsuds—and have gobbled at many a lost button. For nearly 500 years the laundry women of Coimbra have gathered on the Mondego at low tide to wash for the college boys. The Mondego is the only one of Portugal's five important streams which rises within the country. The others are Spanish-born.



Photograph from Ruth Kedzie Wood

TOOTHPICK MAKERS

Peasants whittle these "palitos," or "little poles," for a living. Hundreds follow this humble trade. Willow poles, the bark stripped off so the wood can dry, are stacked about their yards. A leather pad is worn on the knee, so that if the knife slips the whittler will not be cut.



Photograph by A. W. Cutler

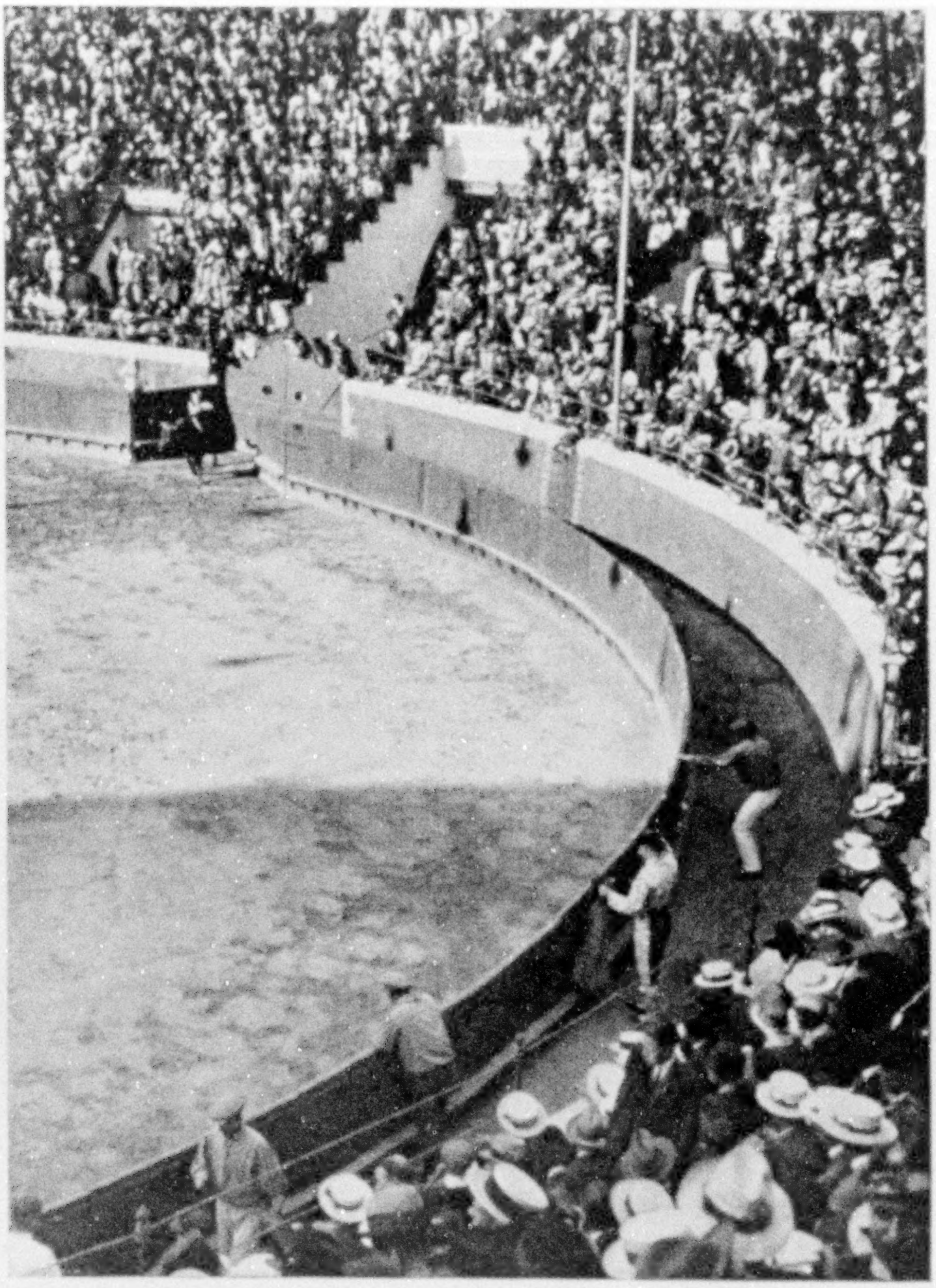
CASTLES IN THE AIR

An idyl on a summer's eve, under the portico of an old convent at Leiria. Through the archway one sees the village, crowned by an ancient castle.

Journeying south, the verdure fades. The African Sahara hurdles the Strait to lay a parching hand on this southern part of the Iberian Peninsula. Here are high hedges of agave, cork oaks, and gnarled olive trees. Olives are pounded into pulp, which is squeezed in the press. With the masses, olive oil takes the place of butter.

On the coast lies Setubal, whose sardine and tunny fisheries were known in the days of the Romans. The south was the first part of the country to be Romanized. Yearly the export of canned sardines amounts to millions of dollars.

The chief city of the Alemtejo is Evora, one of the most ancient-appearing towns of Europe, off the tourist routes. South of the Alemtejo lies the Algarve (El Gharb, the West of the Moors). This is the land of cork oaks, under which goatherds pasture their flocks and swineherds their pigs, on acorns.



Photograph by Franklin L. Fisher

THE BULL RING: LISBON

Arena sports, fights between men and beasts, are old in Iberia, as when prisoners were pitted against lions; but in Portugal now bullfighting is humane. The bull's horns are padded and he is never killed. Note the bull, having charged the outlet gates, is returning to the ring.

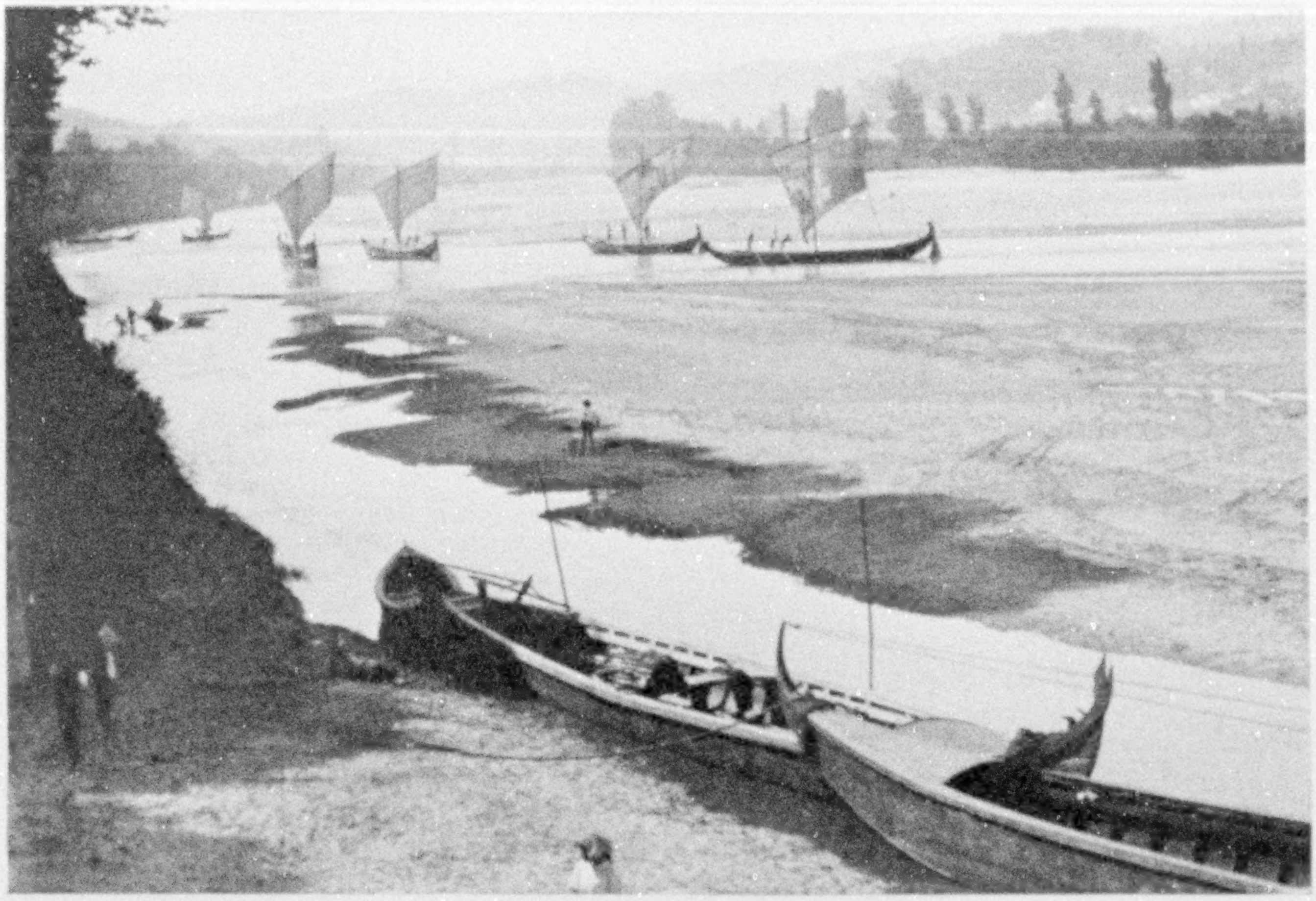
The export of raw and manufactured cork is important. In the Algarve we saw many household articles made from cork, including the covered dinner pails used by the workers in the forest.

We traveled by rail to the port of Faro, on the southern coast, and east to the Guadiana River, which here forms the boundary between Portugal and Spain.

We made a sentimental pilgrimage to Sagres, near Cape St. Vincent, the extreme southwestern point of Portugal, jutting into the Atlantic, where, in the fifteenth century, Prince Henry maintained his nautical school. The foundations of the buildings are still to be seen.

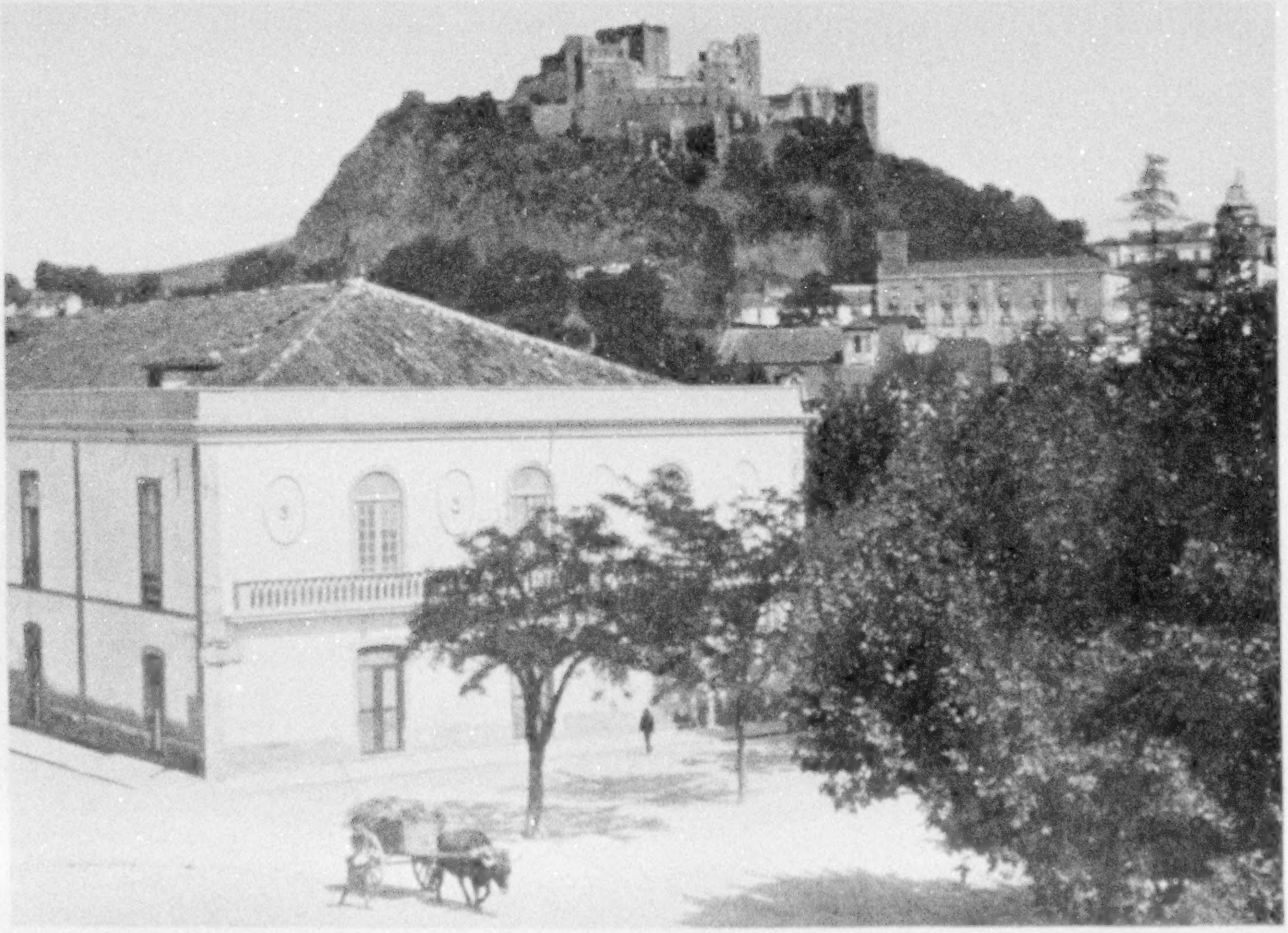
Five hundred years ago the Portuguese had no part in the Far Eastern trade. The spices that made the coarse food of those days palatable, the drugs, cosmetics, silks, and precious stones, in such demand by the luxury-loving classes of Europe, then came by a circuitous and costly route from India (see text, page 511). Between Calicut and Alexandria, distributing point for Europe, the goods were taxed five times.

After the Portuguese capture of Ceuta, Prince Henry talked with intelligent



WHEN THE MONDEGO RIVER IS LOW, BOATS ARE POLED UPSTREAM

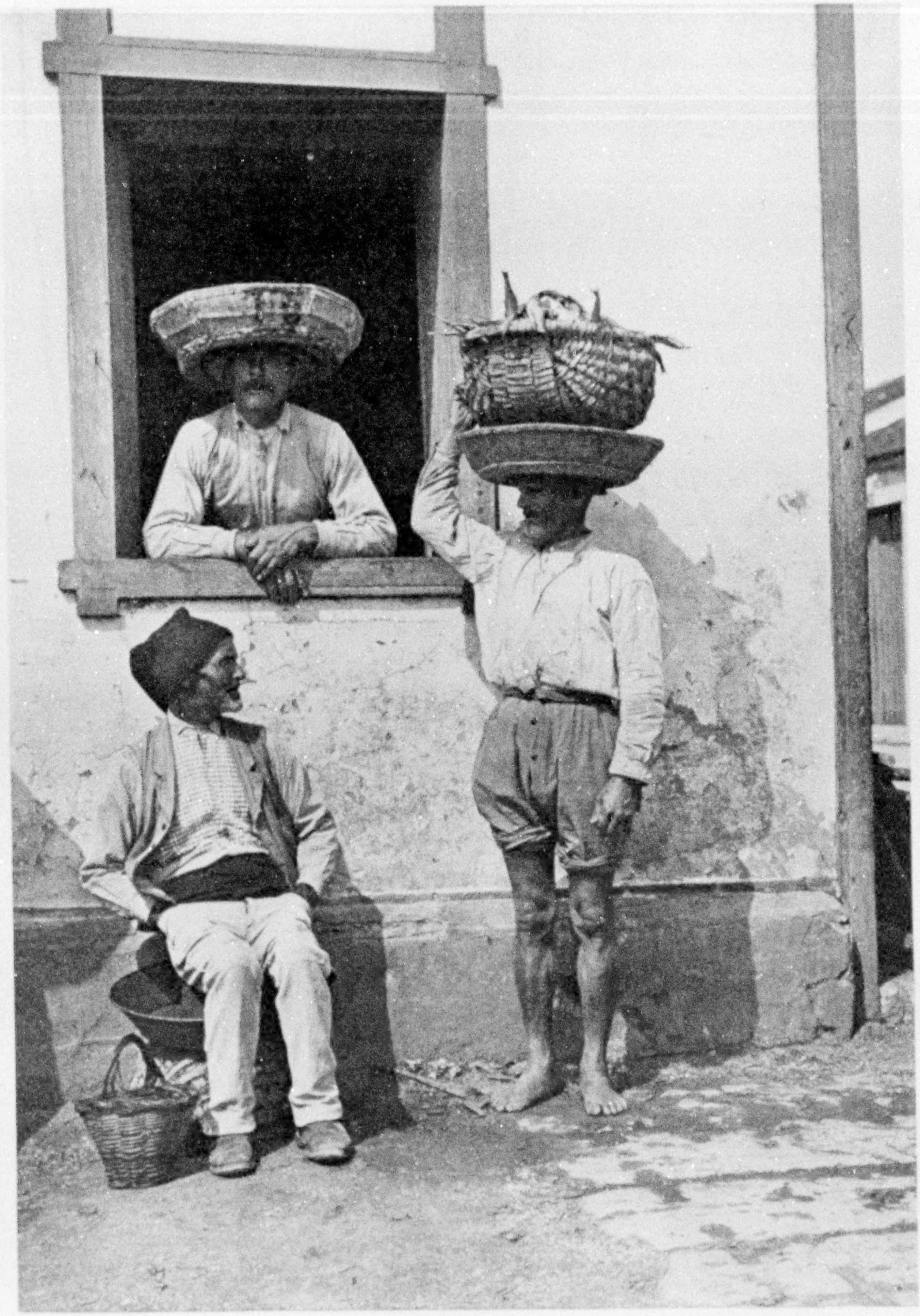
Fruit, wine, slate, wood, and other freight are hauled to market on these quaint river sailboats.



Photographs by Franklin Adams

THE ARABS LEFT THEIR MARK ON PORTUGAL

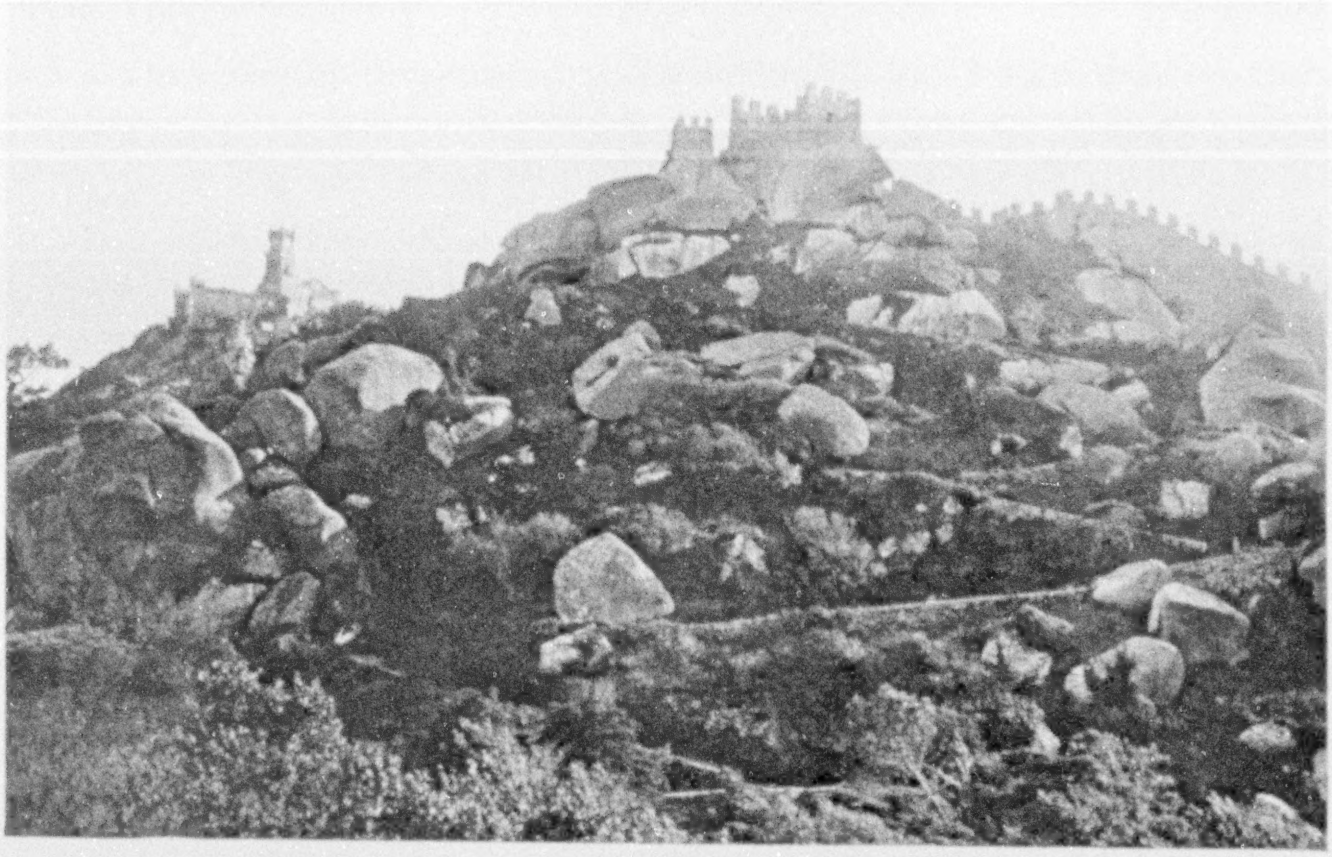
Generations before Columbus discovered America, Moslems built this castle atop a hill at Leiria.



Photograph by A. W. Cutler

SERVICEABLE HEADGEAR

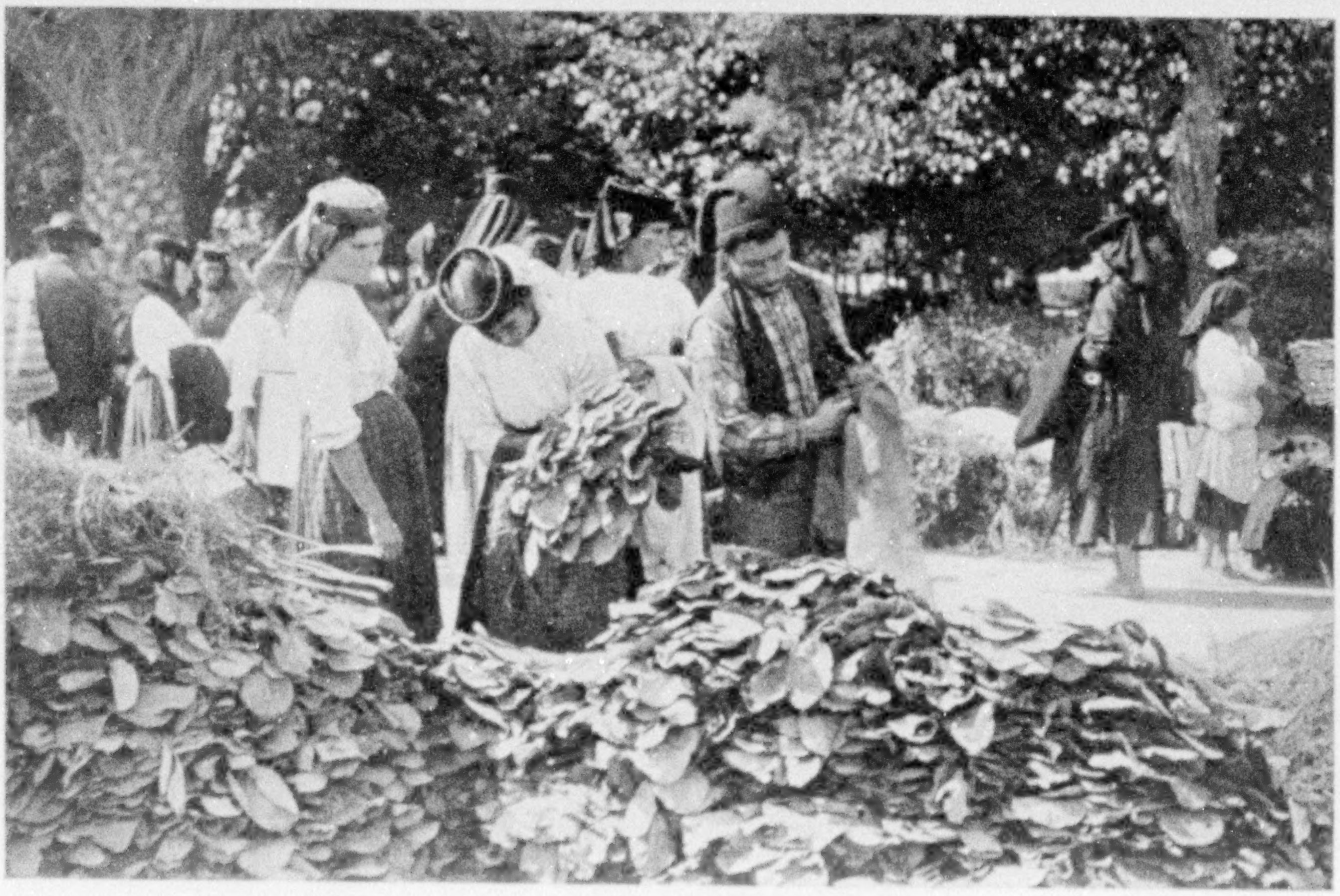
The sardine is to Portugal what the banana is to Costa Rica. These sardine peddlers wear a special tin hat, in which they carry their fish basket. To keep water from running down the back of their necks, their tin hats are fitted with gutters. The man under the window is using his tin hat to sit on.



Photograph by Franklin Adams

AS MOORISH AS THE SKYLINE OF MASKAT OR MECCA

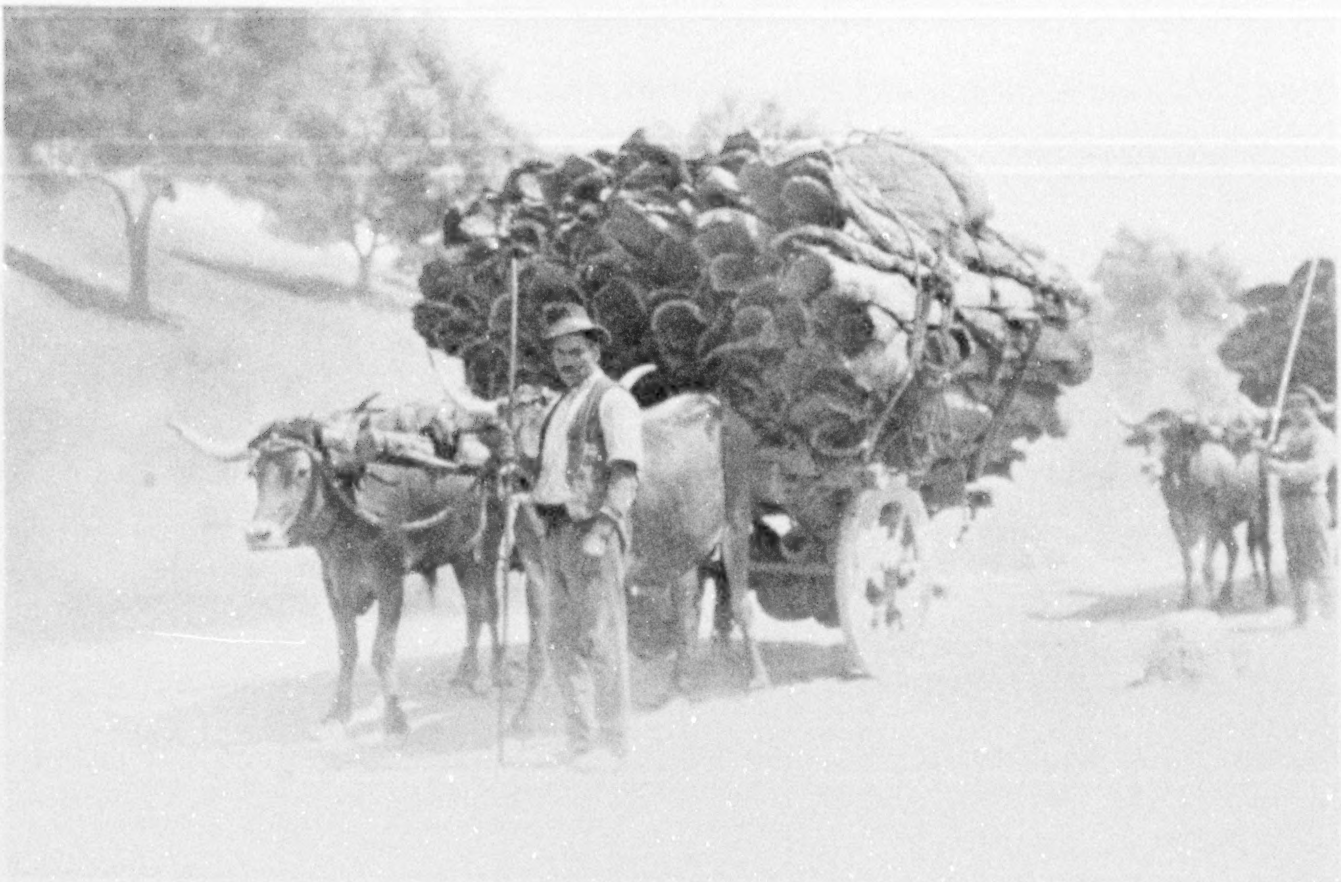
Long ago the Moors were driven from Iberia; but even to-day, in North Africa, they fight their ancient foes. An old Moorish castle at Cintra.



Photograph by Gervais Courtellemont

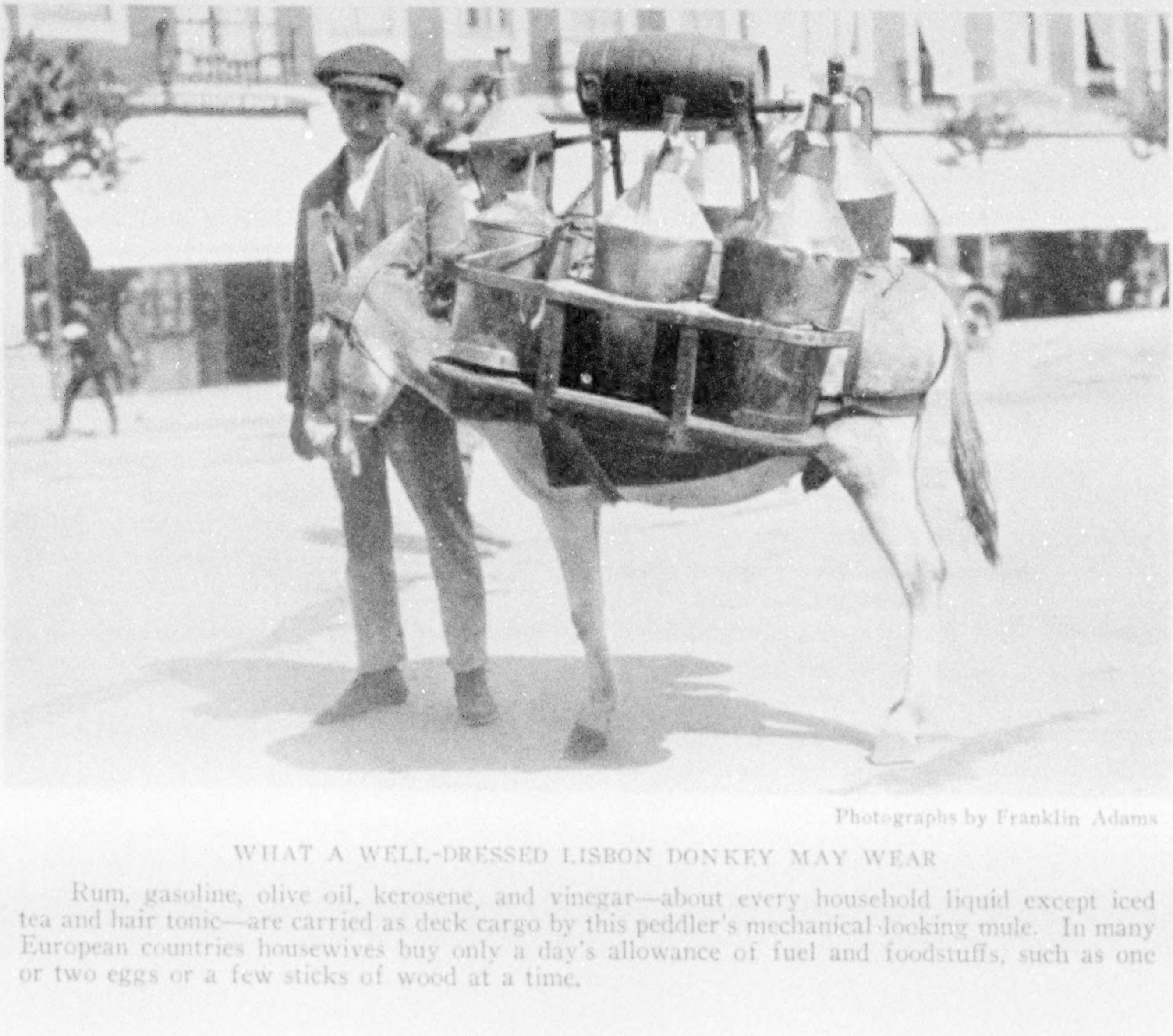
HUNTING FOR WORM-HOLES IN CABBAGE: LEIRIA

The colewort, or cabbage, family is popular in Portugal. Cabbage, dried codfish, and potatoes are a favorite peasant dish. Even the rich of Lisbon come north to the Minho in summer to cool off and eat "caldo verde," or soup with greens. The man wears one of the stocking caps in which Portuguese peasants often carry their money.



A CAPACITY LOAD, BUT VERY LIGHT

Portugal makes wine and seals it with her own corks. In the Algarve district vast forests of cork oaks abound. Here the cutting and export of cork is a large industry.



Photographs by Franklin Adams

WHAT A WELL-DRESSED LISBON DONKEY MAY WEAR

Rum, gasoline, olive oil, kerosene, and vinegar—about every household liquid except iced tea and hair tonic—are carried as deck cargo by this peddler's mechanical-looking mule. In many European countries housewives buy only a day's allowance of fuel and foodstuffs, such as one or two eggs or a few sticks of wood at a time.

Photograph from Levasseur

AS MAJESTIC AS THE ROCK ITSELF

On the wooded heights above the town of Cintra, north of Lisbon, stands Pena Castle. From it one gets an amazing panoramic picture of the Tagus and surrounding country. While many Portuguese castles are in ruins, this one, owned by the government and formerly used by the royal family, is kept in excellent repair.

Moors regarding the possible circumnavigation of Africa, which had been accomplished by Phœnician adventurers about 600 B. C., and attempted by the Carthaginian Admiral Hanno, sailing south from the Strait of Gibraltar, at a later period.

By 1460, when Prince Henry died at Sagres, his enthusiasm and guiding hand had sent the Portuguese flag down 1,500 miles of the West African coast.

I have seen Prince Henry's portrait in an old manuscript preserved in the Bibliothèque Nationale of Paris—an earnest, intelligent face, clean-shaven save for the closely cropped mustache. He wears the wide-brimmed black hat portrayed by Dutch painters of that period.

Affonso Henriques, Prince Henry the Navigator, Vasco da Gama, and Camoëns are the four biggest names in Portuguese history. Affonso Henriques was the George Washington of his country; Camoëns was the singer of the days of Portugal's maritime glory, Vasco da Gama the sung; but it was Prince Henry who blew life into the sails.

So I thought as I stood at nightfall on the bold Sagres headland, looking up at the star-lit blue of the heavens and down on the surging sea.

ROUND ABOUT LIECHTENSTEIN

A Tiny Principality Which the Visitor May Encompass in a Single View Affords Adventurous Climbs Among Steep Pastures and Quaint Villages

By Maynard Owen Williams

Author of "Czechoslovakia, the Key-Land to Central Europe," "Latvia, Home of the Letts," "The Grand Duchy of Luxemburg," "Struggling Poland," etc., in the National Geographic Magazine

With Illustrations from Photographs by the Author

IF YOU are a map traveler, Liechtenstein-bound, follow the castled Rhine, skirt the Black Forest to Basel, swing east past the Falls to the shed at Friedrichshafen, where Uncle Sam's Zeppelin, the *Los Angeles,* was built, and you are on the Lake of Constance, or Bodensee, shared by Switzerland, Austria, and Germany. Turn south for 20 miles up the broad valley between Switzerland and Austria and you reach the northern tip of the Principality of Liechtenstein, which for the next 15 miles looks west across the Rhine.

To reach Liechtenstein in person requires self-discipline. One must leave Paris and Switzerland behind and stop short of Vienna and Budapest. Forego an evening in Paris, be aboard the Budapest sleeper just before 9 and before lunch time you will arrive at Buchs.

In the station the Babel of tongues was being systematized by linguistic hybrids who translated confusion into sense. Yet the queue stopped so long that the express snorted impatiently. Then we moved on.

"My word!" ejaculated the man in front of me. "It was a Dutchman trying to talk Esperanto to the booking clerk."

"You people don't care to learn new languages," objected another Esperanto delegate, still aggressively enthusiastic after a Zurich convention in favor of a common medium of expression. "But here in Central Europe we do." *

We rolled across an imposing canal, passed over the Rhine, and, after two miles, stopped.

"No one gets out here," proclaimed the conductor. He was misinformed. I saw my trunk outside, noticed the name "Schaan-Vaduz" on the station, salvaged my suitcase and camera, and dropped from the moving train into Liechtenstein.

To the right the narrow plain between mile-high mountains and the Rhine stretched away toward Sargans, off the south tip of the Lilliputian land. To the left was the "low country." The express had tossed me off at the division line between Schellenberg and Vaduz, once separate units, and fiefs of the Roman Empire.

One who thinks of the Principality as a part of the Swiss Customs Union expects this small mountain-side State to be west of the Rhine, leaning against St. Gallen instead of hanging to the shoulder of Vorarlberg. But political changes hurdle a river easier than mile-high mountains do. Until 1919, free Liechtenstein was economically allied to Austria. The "K. K.," denoting Kaiser and King, on the Schaan post office, though partly obliterated, is still visible.

Here the Rhine is no romantic river for deep-water sailors, with a prima donna mermaid parading her tresses before bobbed-haired tourists. It is a shallow, stony torrent bed, now dry in spots, now foaming with the force of Alpine glaciers. Man has taken the river in hand, overcome its meandering habits, and confined it between prosaic, though curving, banks.*

Between the Rhine and the sway-back ridge of Liechtenstein is a narrow plain

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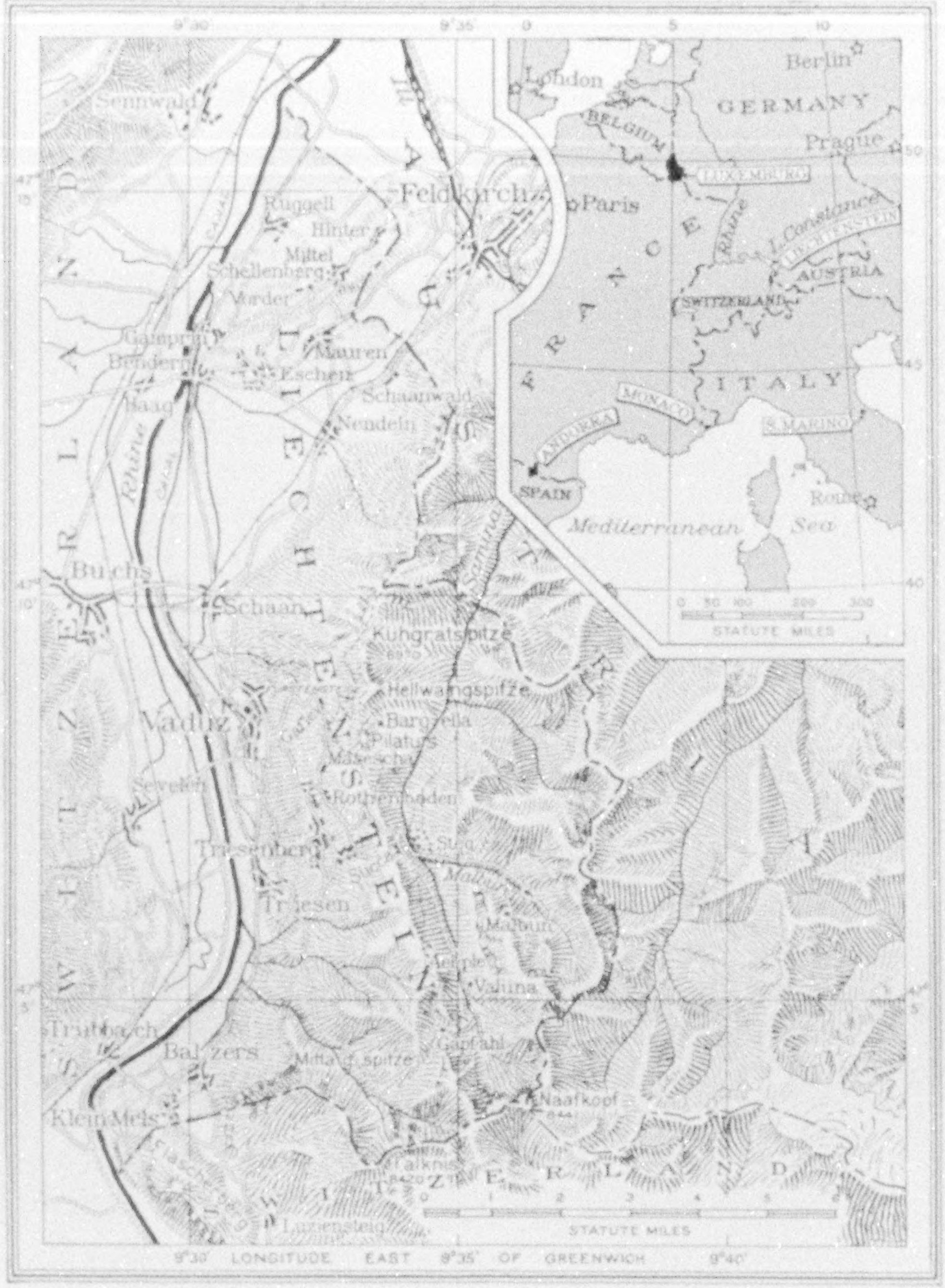
* See, also, "The Battle-Line of Languages in Central Europe," by A. L. Guerard, in the National Geographic Magazine for February, 1923.

* See, also, "Rediscovering the Rhine: A Trip by Barge from the Sea to the Headwaters of Europe's Storied Stream," by Melville Chater, in the National Geographic Magazine for July, 1925.


Berlin
London
GERMANY
BELGIUM
Prague
LUXEMBURG
Paris
L. Constance
LIECHTENSTEIN
FRANCE
AUSTRIA
SWITZERLAND
ITALY
MONACO
ANDORRA
S. MARINO
SPAIN
Rome
Mediterranean Sea
STATUTE MILES
Sennwald
Ruggell
Feldkirch
Hinter
Mittel
Schellenberg
Vorder
Gamprin
Bendern
Mauren
Eschen
Haag
Schaanwald
Nendeln
Rhine
Buchs
Schaan
Kuhgratspitze
Hellwangspitze
Vaduz
Bargella
Pilatus
Sevelen
Rotenboden
Triesenberg
Triesen
Malbun
Valüna
Trübbach
Balzers
Mittagspitze
Gapfahl
Naafkopf
Klein Mels
Falknis
Luziensteig
LIECHTENSTEIN
SWITZERLAND
AUSTRIA
STATUTE MILES
9°30' LONGITUDE EAST 9°35' OF GREENWICH 9°40'

Drawn by A. H. Bumstead

A SKETCH MAP OF LIECHTENSTEIN

devoted to hay, corn, and grain, with orchards here and there, stately poplars marking some roads and vineyards on the gentler slopes. At the place where it curls up to cliff and mountain meadow, a road, split into a Y by the Schellenberg, unites the valley towns from Ruggell and Schaanwald to Klein Mels.

Schaan, with 1,400 inhabitants, is at the focus of the three branches and the short international road to Buchs. Its chief landmark is a sharp-spired church whose architect borrowed inspiration from the needles of rock above it.

To the right the mowing-machine blade of a saw-tooth factory roof cuts the green of pine and beech. Farther south is the capital, with the old château, founded on Roman ruins, hanging over it like an eagle perched above its nest and looking at the eggs between its feet.

To the right of the castle the bottle-green forest, veiling the faces of half-domes upon whose tops are pleasant plateaus, merges into the broken pattern of the rolling Triesenberg, whose chalet groups dot a park-like region between barren terminal mountains. Below is Triesen, from whose one factory chimney Ruhr coal smokes when winter ties up the otherwise inexhaustible water power.

ANOTHER PLACE OUR COTTON GOES

The mowing-machine blade between Schaan and Vaduz edged a spinning-mill roof. The Triesen smokestack rises above the looms of an allied weaving mill equipped with the latest apparatus for humidifying the atmosphere—a seemingly superfluous device on the rainy day I was there. The raw cotton comes from America. The cloth is sold in Budapest. The 300 weavers come from the valley towns and down from the Triesenberg.

These two major dots on the landscape indicate most of the country's industrial life. The flour and sawmills, for the most part, are homely affairs which add unobtrusiveness to genuine service.

South of Triesen there is little evidence of man's works. At Balzers a large memorial church and a rock mass surmounted by Burg Gutenberg, never captured, but now used as a hotel, are dwarfed by the Mittagspitze and the Falknis, and are almost lost in the broadened plain whence a valley road mounts to Luziensteig. At the foot of the Swiss Fläscherberg, which balances the Schellenberg, is Klein Mels. The small cluster of homes is merged into a green plain cut by a white road leading to the Klein Mels-Trübbach bridge, one of the four covered wooden structures which furnish communication with Switzerland across the man-tamed Rhine.

To the left, or north of us, the arms of the Y confine a wide triangle of level, marshy land, with three small groups of houses spaced across its farther edge. Above them rises the Schellenberg, a low, rolling hill dwarfed by flanking mountains.

Above Schaan towers a wild rock face, scarred and torn by time's shrapnel. Closing in the southern end of the landscape is the Falknis group, almost as rugged. Between the 7,000-foot Kühgratspitze and 8,420-foot Falknis the country's backbone dips to a scant 5,000 feet, so that one can look across this saddle to the Naafkopf, whose 8,441 feet, shared with Austria and Switzerland, marks the highest of a dozen or so more-than-mile-high peaks in this pygmy Principality.

A BUDDING MEMBER OF THE UNOFFICIAL SECRET SERVICE

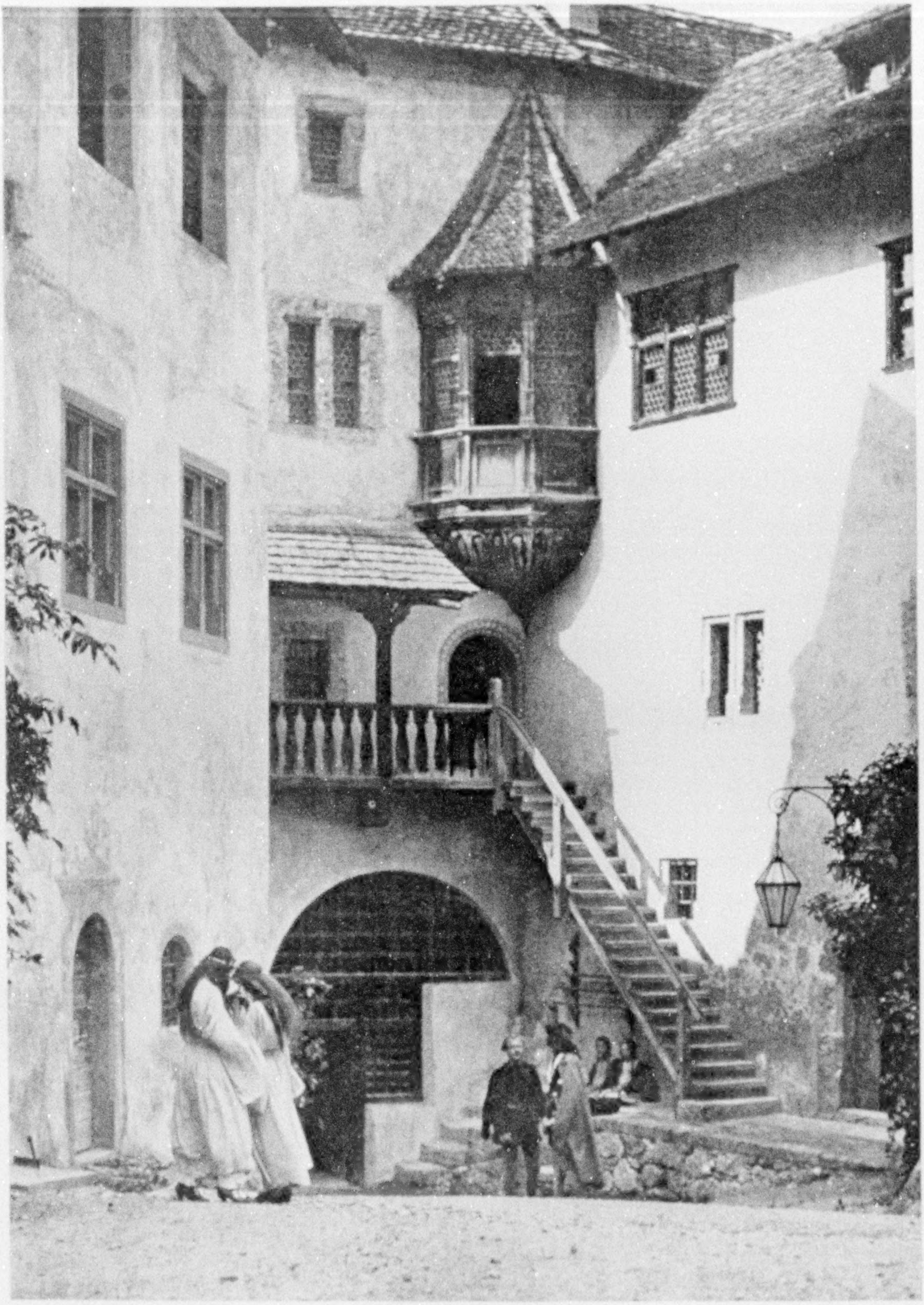
So neighborly a place is the Principality of Liechtenstein, with its 11,000 people, that official bulletins are mere gossip sheets, and a chummy youngster can learn more about a casual visitor than the metropolitan police of larger places do from a printed questionnaire.

At the sag in the ridge the cross-country road saves a few feet of height by means of a short tunnel joining the populous Triesenberg with the deserted slopes of the Samina Valley. In summer one walks through this dripping tube from the hush of hayfields to the sound of grazing cattle swaying melodious bells.

The Samina Valley, narrow, thickly wooded for the most part, and lightened at its bottom by a silver-green, impetuous river, cannot be seen from the Swiss slope where we stand, but as we include in our view the heights beyond it, we can safely be said to command the entire country in one glance.

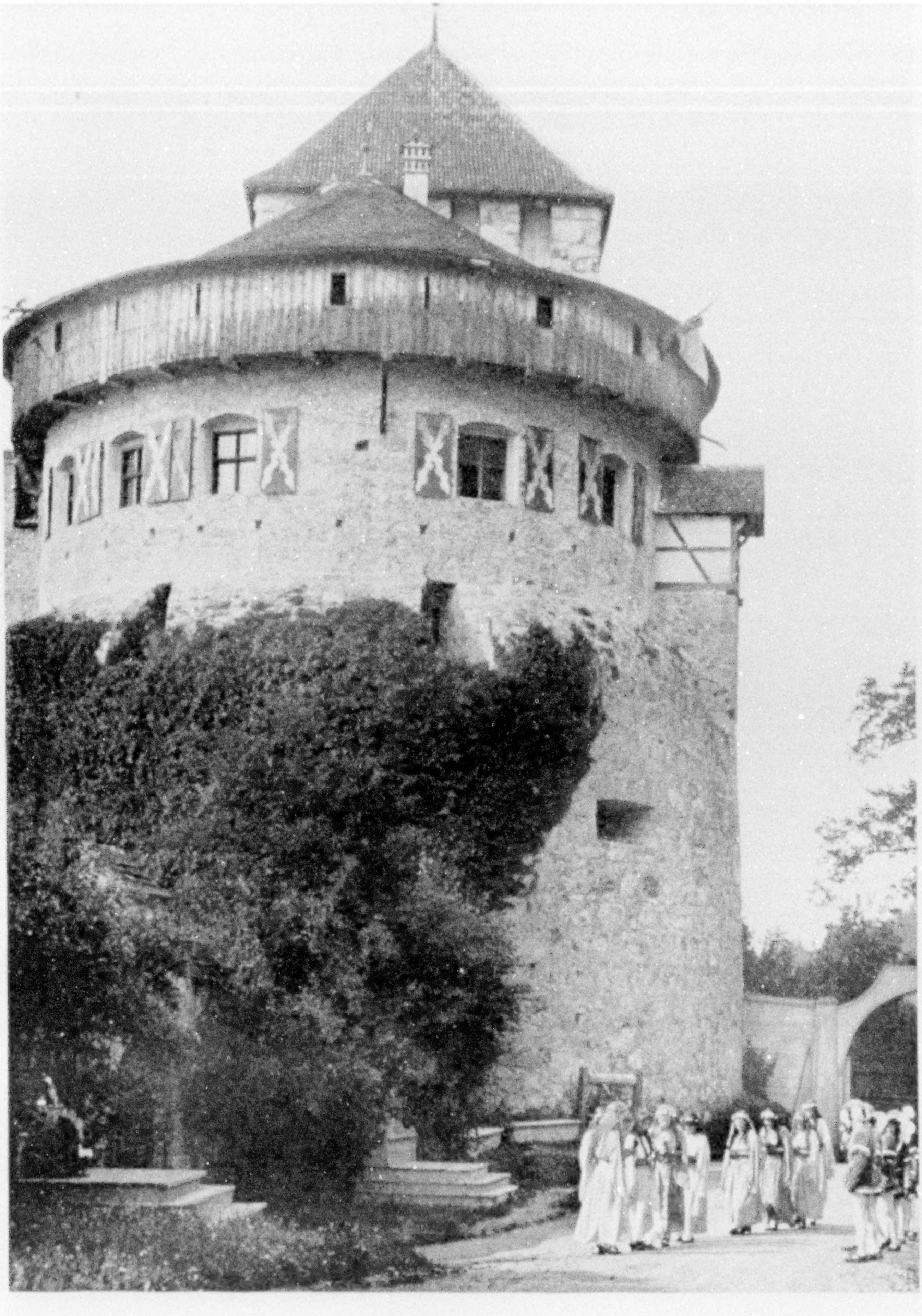
RIVALS MONACO FOR INCLUSIVE VIEW

Probably no other state except Monaco has been seen in its entirety by so many people. Neither Andorra nor San Marino is so advantageously placed. Every visitor to the Swiss society resorts of Davos and St. Moritz could look the length of the Principality from Sargans before his train turns south away from Liechtenstein. The traveler to the Lake of Constance



PLAYERS REENACT THE LIFE OF THE MIDDLE AGES AT THE CASTLE OF VADUZ

Erected in 1712, Burg Vaduz was restored two centuries later in a sixteenth-century style. This view shows the inner court during one of the weekly pageants which picture life in Vaduz at the time of the minnesingers.



FARM LAD AND VILLAGE MAID PLAY AT KNIGHT AND LADY

During the summer season Liechtenstein attracts foreign visitors to its tiny capital to see open-air plays depicting the life and adventures of the romantic minnesingers, poets, and serenaders of the Middle Ages. This scene is from "Herr Walther von der Vogelweide."

YOUNG LIECHTENSTEINERS TAKING THE AIR

Agriculture occupies the level, Rhine-side plain of Liechtenstein, while cattle-grazing and hay-growing climb the steep hills. Most of the people are hard-working agriculturists of German descent.

and Germany passes the whole land in review. The passenger on the train to Innsbruck and the Tyrol or the triweekly Orient Express rides the rails that separate Liechtenstein into highlands and low.

Schaan, express stop and metropolis, has plate-glass windows in which ready-made gowns in late styles are displayed, though the women usually spend their money for durable ginghams. One shopkeeper has tempted fate by keeping modern millinery.

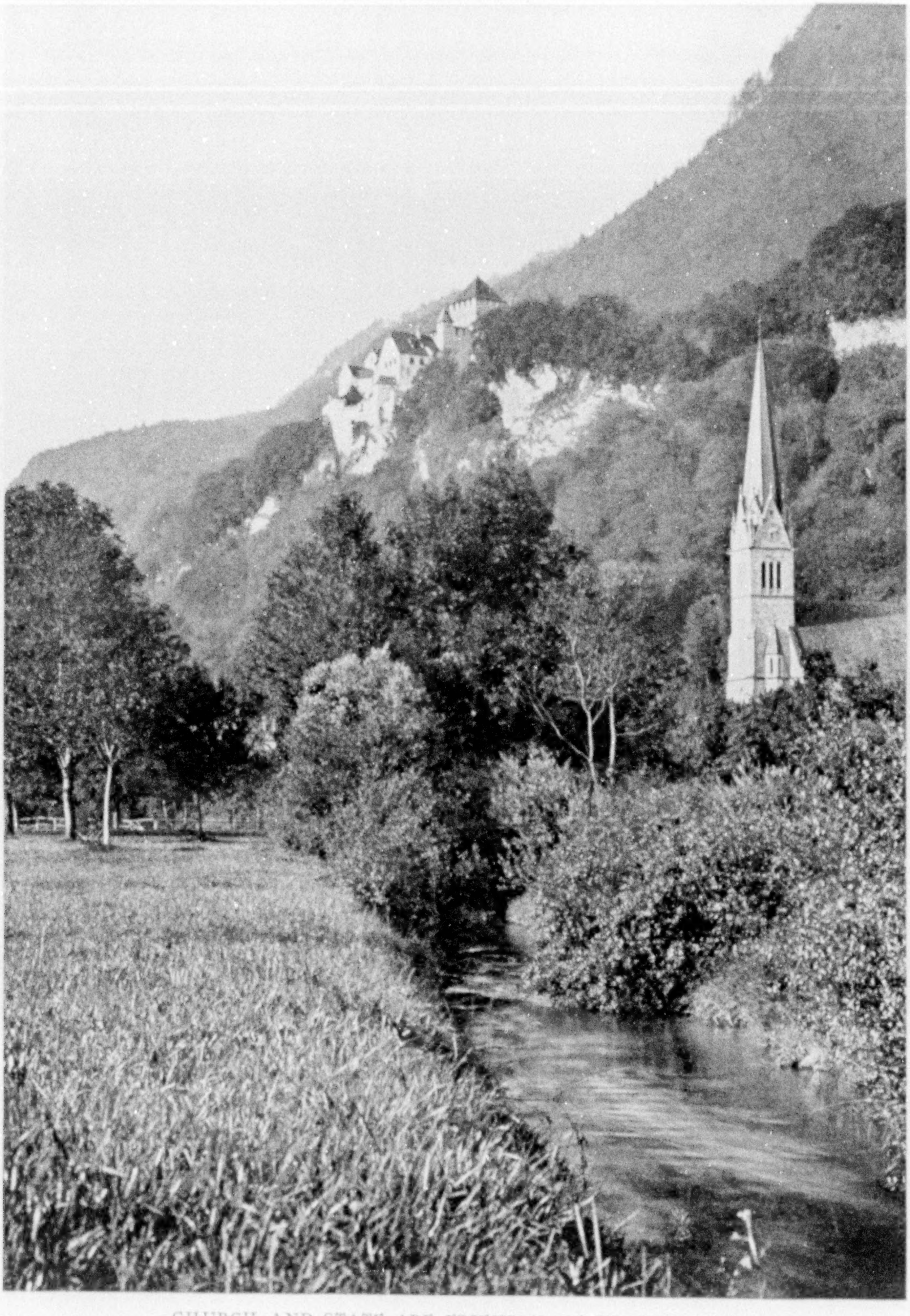
My homely inn at Vaduz might not please fastidious travelers. The only running water was in a stone trough outside my window. Yet I look back on it with longing. What if the lower hall was a thoroughfare for half the town! Even so humble a capital must have its Peacock Alley. The bed was clean and comfortable. The food, too rich and plentiful for all but active folk, was designed to satisfy one who had carried heavy apparatus along mountain trails.

From the first day, one becomes a citizen. Man, maid, and child, all look one over with keen, but friendly appraisal. And what a delight it is to pass this informal inspection and be greeted with the password, "Grüss Gott," usually shortened to "Sgott," with neighborliness compressed even into that short syllable!

It is impossible to remain a stranger. Some freckled towhead, pushing his sisters in a rude but sturdy little cart, breaks the ice with a smile and a "Sgott." His mother then exchanges a word or two, and before one has reached the corner she has told your nationality and business to the village barber.

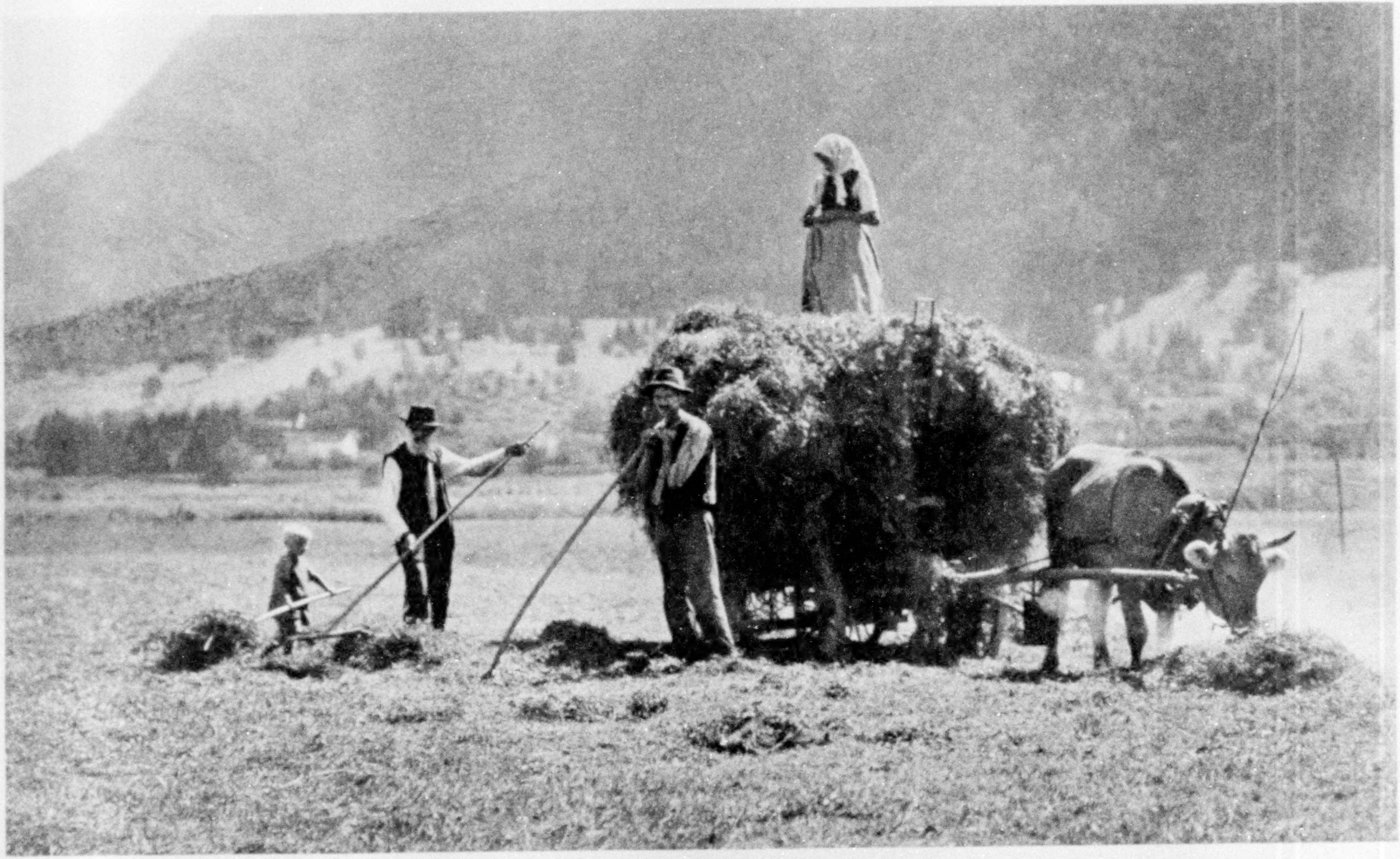
By evening one has not a secret left. "He has had a hot bath at the Grüneck every night since he came," said a voice in the dark during the weekly movie. It may have referred to some one else, but I was glad that I had been liberal with my laundry.

The main street of Vaduz is part of the



CHURCH AND STATE ARE FRIENDLY NEIGHBORS HERE

High above the little capital, the Burg Vaduz, local home of Prince Johann II, also serves as a museum. In the valley is the Vaduz Church. Between the mountains and the Rhine, the plain which makes up agricultural Liechtenstein is as level as a floor and is protected by a dike, over which the Rhine swept September 26, 1927, causing great damage.



THANKS TO THE SMOKE POT, THE OX CAN EAT IN PEACE

Three generations haying in the low country near Mauern. The lowlands are infested with fierce-fanged flies, against whose onslaughts few women wear protecting stockings.

post-automobile route which runs along the length of the land. Below the castle the town broadens into the plain and up the slope. Northward there is space between the houses for good-sized vineyards, beside which several foreigners have built charming villas with a wonderful view of the upper Rhine Valley.

The homes range from weather-worn wooden structures, whose color matches the kindling wood stored under their eaves, with bright geraniums lighting up the shadowy, brown-stained verandas, to bright stucco homes that might be anywhere. Opposite the church is a delightful little chalet which needs a mountain attached to it, but it is bright with flowers, deep and low of eaves, and has a four-toothed baby on the porch.

There are no office buildings or business blocks. A window or two is enlarged, a partition left out, and a house becomes a general store, a shoe-shop, or the post office. The Government Building rather overawes with its Renaissance style, its bright mosaic in gilt and colors, and its imposing porch; yet this seat of the popular Diet and the Prince's Administrator is as approachable as any building in the town. Bicycles are draped negligently about it and the cattle driver, laying his goad aside, enters with all confidence.

REIGNING PRINCE TOOK OFFICE BEFORE LINCOLN INAUGURATION

Machiavelli says, "Dominions are either accustomed to live under a prince or to live in freedom." The people of Liechtenstein do both.

Who would be so prosaic as to verify the rumor that until recently the people of this favored land not only had to perform no military service or pay taxes, but even sent to their Prince the bills for entertainments given in his honor?

When confronted with the figure of a benign prince 87 years of age, who would inquire just how much hand that genial gentleman actually has in administering a Principality only one-thirtieth as large as his private estates? Liechtenstein is so small, so neighborly, that one who delves for facts regarding it is by way of feeling himself a gossip monger.

The old château, restored in 1907 to habitability, but fitting perfectly its ancient site, is a veritable treasure house, its rich relics doubtless worth more than the land itself.

CHÂTEAU IS A TREASURE HOUSE

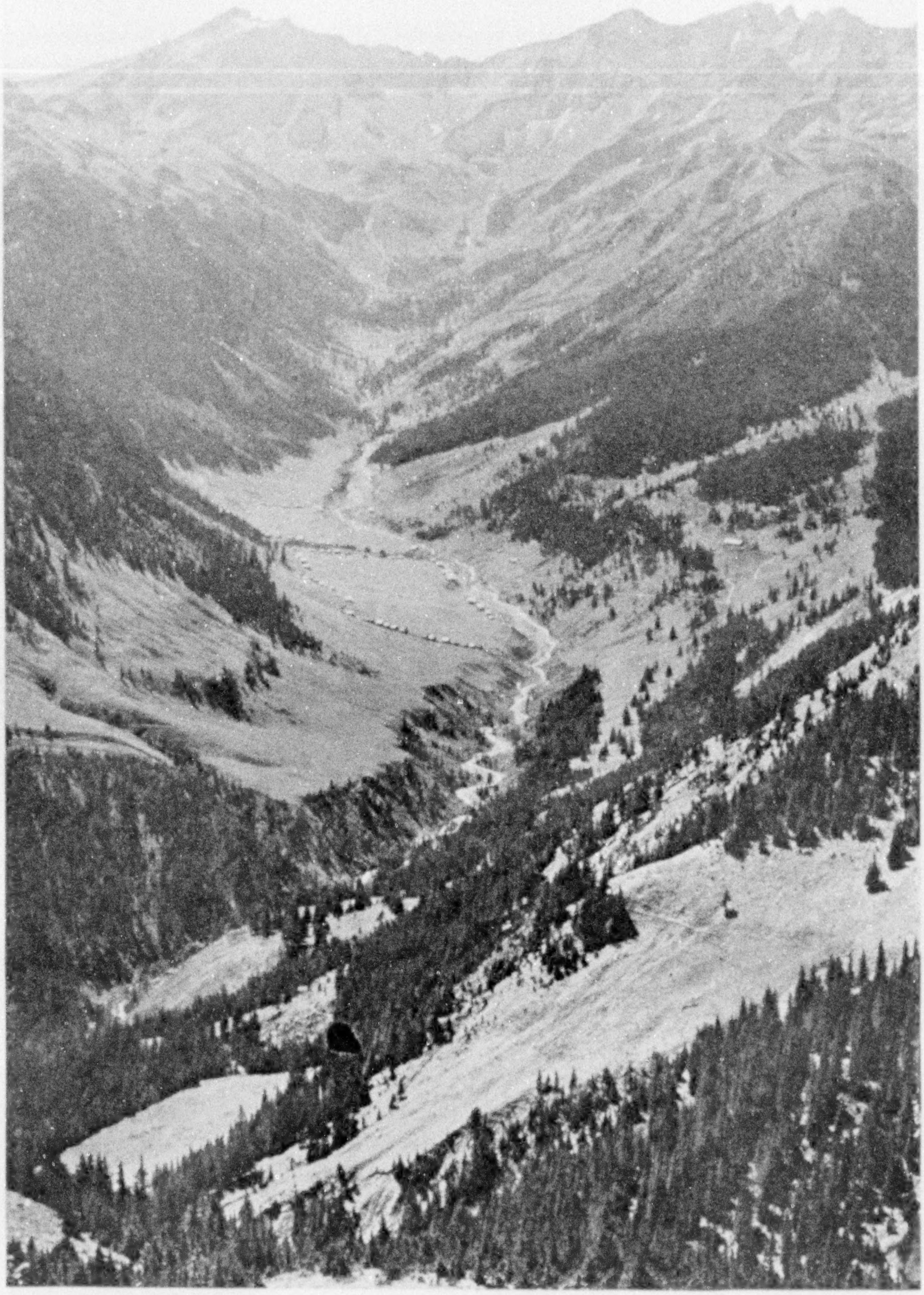
Old tomes with musty bindings, shadowy canvases yellowed by time, frescoes showing hunting scenes with paintings of deer surmounted by actual antlers, a legendary fish-bird-man much like those on the columns supporting the jube of the Luxemburg Cathedral, old coats of arms, Chinese and Moorish cabinets rich with ivory, a fine Adoration of the Magi, and a 1523-altarpiece showing a blacksmith shoeing a horse whose hoof has been removed to the blacksmith's lap several feet away — these are among the treasures guarded by a castle whose lower walls are more than 20 feet thick and whose upper walls are 10.

The electric lights and fans, elevator and telephones do not obtrude; but this old castle, paneled in dull brown, is too somber a dwelling. The lovely women who lived here long ago have left no sign. Silks and satins once swept these halls, but only coats of mail and weapons remain.

Judging from the relics here collected, the Vaduz castle was not an effeminate place. The old château has forgotten the love ballads and roundelays of the knightly minnesingers for martial songs, praising arms and the man. Here vanquished Venus bends the knee to Mars.

The collection embraces the epoch of sword and mail and carries one through the arquebus stage into that of blunderbusses and guns—guns with smooth female figures on their ivory stocks, so that when the owner sighted at doe or foe his cheek pressed such a nude Venus as Paris praised; guns on whose locks hunting scenes are engraved with remarkable detail, or a "Got Mit Uns" suggests an ancient conceit still sometimes held.

One Spanish gun is incased in carved ivory whose intricate workmanship the cleverest artisans of Canton or Kyoto could not surpass. Famous scenes from mythology hide stock and barrel, and along the top runs a Latin inscription meaning, "Better to die in war than see our loved ones harmed." When that steel-and-ivory treasure was fashioned, the Pilgrims were still depending upon marksmanship for much of their food.



THE V-SHAPED HINTERLAND OF A STONE'S-THROW STATE

Although comprising only 62 square miles of territory, Liechtenstein is possessed of a hinterland in the Samina Valley. The ridge at the right is the backbone of the land, while in left center is Sücca, cattle-grazing station and rest house. At the end of the valley is the Naafkopf, 8,441-foot frontier point between Switzerland, Liechtenstein, and the Vorarlberg province of Austria.

There are Albanian guns with heavy butts, Arab guns with almost none, squat blunderbusses and guns 12 feet long, with a heavy stirrup to support the unwieldy barrel.

When Liechtenstein's last army was demobilized their 80 muskets and fourscore leather helmets were brought to this peaceful war museum belonging to a state too tiny to defend itself.

The first things one sees on entering the outer gate are Maria Theresa cannons. The last memory is of a blunt-pointed executioner's sword with a beheading scene engraved on the now idle blade, and of old halberds bearing the ancient arms of Liechtenstein, free land for centuries.

SMOKE POTS USED TO WARD OFF "SAVAGE" FLIES

Every Sunday during the summer there is an open-air play outside the castle walls and one of the first voices comes down from a round-tower window high above the heads of all. If the week-day aspect is somewhat spoiled by rude benches and beer booths, the sight of plumed knights and long-gowned ladies in a dramatization of the German type of troubadour at the time of the Guelphs and Ghibelline more than makes up for it.

The northern lowlands are relatively lacking in interest, though savage flies do divert attention. Draft cattle are protected by smoke pots, which are hung from the wagon tongues and optimistically are supposed to keep the flies away. But the luckless cyclist carries no such fly-fighting equipment.

It seemed as though my climb to the top of the Schellenberg would never end. Days later, when I looked down upon that mere hummock from the mountain peaks above it, I laughed at the heat and the flies. But my conception of Hades, made vivid by many a Taoist temple scene, has been rendered more dramatic by the thought of having to carry a smoldering smoke pot across a hot, peaty plain, feeling its heat without having it banish the brutal flies.

When one gets to the top, there is a delightful view, for the Schellenberg, a mixture of bright-green fields and dark-green woods, ranks with the Triesenberg in its effeminate charm.

Three towns bear the Schellenberg name. I had sweet omelet and good coffee in Mittel Schellenberg.

On walking through flowery fields back of the convent one can look down on Vorder Schellenberg. Cupped in a scene of rare beauty, I found it charming. (So much for the effect of sweet omelet and coffee.) On coasting down through this little town, there seemed no reason for stopping. To coast on such a day was sheer delight, even though one ended in a fly-plagued plain.

At Gamprin there is a mill, operated by a man who lived for years in Minneapolis, but did not take up milling until his return to Liechtenstein. From a dusty face with whitened eyebrows a dough-lined mouth welcomed me in plain "United States." Of course I had to "sit a while" and look at the post-card album containing highly chromatic views of the railway stations, public libraries, and parks of half our Middle West.

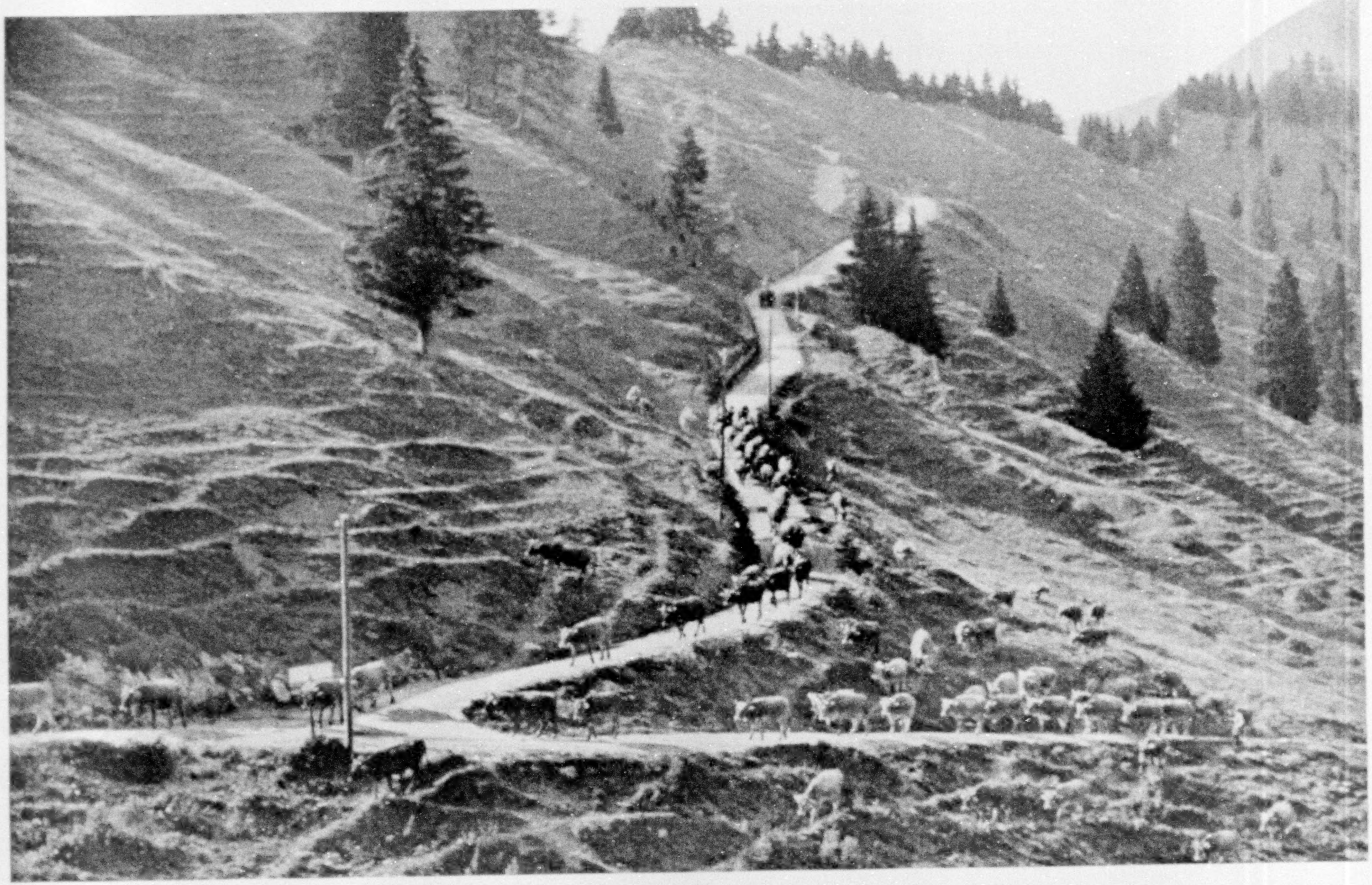
"I get homesick for America," said the miller. That made it unanimous.

Then along the curving *bund* between canal and Rhine, with Mount Sentis staring down upon the scene, until I came to the northernmost of the country's four wooden bridges connecting Bendern's small but showy church with the little Swiss town of Haag. Then back across the southern end of the Schellenberg to Eschen.

A LANDSCAPE OF LAWNS

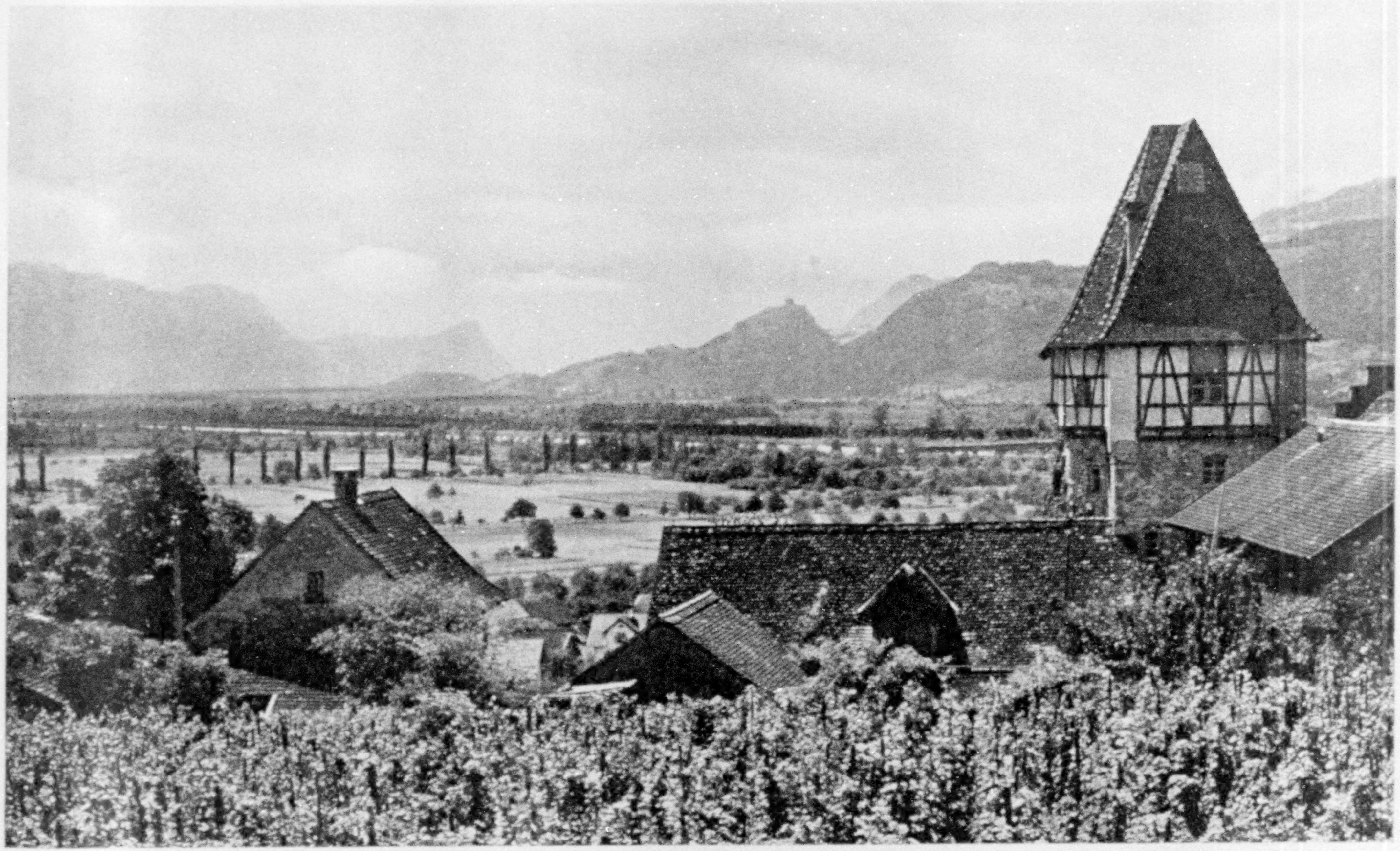
There was no good reason for stopping at Eschen. There must be many towns like it. But near the watering trough there is a lawn. Two days after the hay is cut on field or mountain face, half of Liechtenstein is like a cliff-walled lawn; but this was a lawn by intention. A rude curbing marked its limits, and although its surface would have made a tennis ball erratic, it was evident that some person had definitely set out to have a bit of green beside his house, not as fodder, but as a feast for the eye. As I refreshed myself in an inn decorated with pictures of village bands and singing societies, my glance turned again and again to this eye refreshment.

The ride across the plain carried me past a score of haying parties, with women



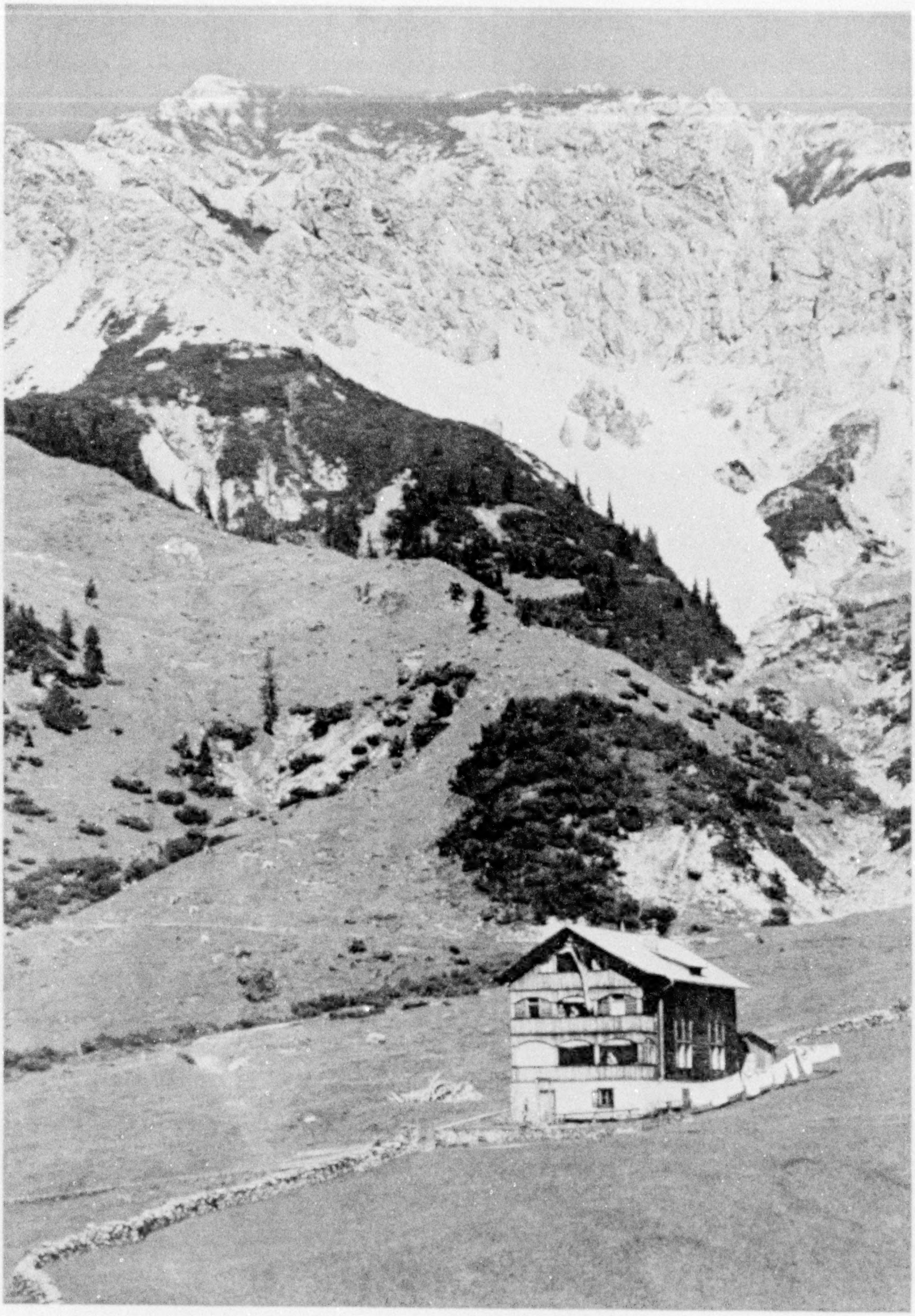
ALL PATHS ARE COW PATHS AT SÜCCA

This little village is a stabling place for the large herds of cattle from the Rhine Valley, which are pastured here in the Samina Valley from June to September. Cattle-raising is one of Liechtenstein's most important industries.



SCENES OF PASTORAL BEAUTY ABOUND IN THIS TINY DOMAIN

Looking south up the Rhine Valley from the vineyards in the northern part of Vaduz, the Liechtenstein capital. The line of poplars marks the road between Vaduz and Sevelen, a station on the Sargans-Rorschach line of the Swiss Railways. At the right is the red tower of what is believed to have been an old Benedictine monastery, now a private dwelling.



LIECHTENSTEIN HAS PLENTY OF ALTITUDE

In a region no larger than the District of Columbia, there are at least a dozen peaks more than a mile high. This mountain range forms the Austrian border, with customs officers at the passes and a closed boundary along the peaks. The building in the foreground is a little hotel at the foot of the Ochsenberg.

doing a goodly share of the work, but wearing only a small fraction of the shoe leather. Children go barefoot. Except in the towns, most of the women wear nothing on their feet and legs. Man, rich or poor, requires stout shoes, with hobnails.

Throughout the triangle marked by Schaan, Nendeln, and Bendern flow occasional drainage canals cut in the peat, with bricks of the fuel spiked onto staves to dry before being piled in the shelter of rude sheds. Fierce-fanged flies hover in the vicinity. It is a privilege there to be a man and to wear woolen socks, which must discourage even these voracious pests a little. How do the bare-legged women and children stand it?

As on the mountain sides, the hay is of a coarse, uncertain character, combining rich, sweet-scented clover with rank weeds. Except on the steepest slopes, this hay, when cut, is draped over vertical posts with three crossbars inserted in them.

Rain is so frequent and these drying racks so indispensable that the amount of hay cut at one time depends on the number of drying racks and the amount of labor available. On the steep mountain side the dried hay is raked to the bottom, so that during the haying season long ribbons of cut and uncut fields reach up the tip-tilted landscape like vertical stripes on two-toned green velvet, and the width of the stripes indicates the number of farm hands or the state of the weather.

In Vaduz the week-end is holiday time. Saturday night brings the weekly "movie" to a hotel drinking hall. Not a score of people were there, and I was told that such is usually the case. The Liechtensteiner prefers to drink his beer in a lighted room.

At the inn there was as much enthusiasm as there had been apathy before the tarnished silver sheet. The men's singing society was tuning up. The power of music on savage breasts is known, but the ability of a swinging song to weld a lot of insignificant men into an impressive unit is worthy of notice.

Climbing the hills the next morning, I overtook three ladies whose aggregate age certainly equals that of the United States. In spite of knapsacks and heavy climbing shoes, they were thoroughly enjoying themselves.

"You must climb the Fürstensteig," said

AN ENTENTE CORDIALE

PURVEYORS OF SMILES AND FRIENDLY GOSSIP

Vaduz is a small place, where one soon knows all about you, and if you smile at a child in the morning, his grandmother smiles back at you the same afternoon. Indeed, this enchanting town is a sort of whispering gallery of friendliness. The smaller of these two old ladies carries a combination rake and hoe, which is a favorite tool for light gardening.

the whitest-haired of the three. "It is not a difficult trail and it is wonderful."

But clouds settled down from Gaflei and, as my objective was photographs, I returned to Vaduz for the open-air play beside the castle, with some excellent acting of an obscure plot, with a Vaduz girl making a charming heroine and farmer boys not too awkwardly wearing the plumed hats of medieval knighthood.

EVENING SOLOS ON AN ALPINE HORN

After dark there was the singing evening by the male chorus and solos on the Alpine horn, like a huge clay pipe with a thick stem, whose tones are softer than one would expect from such a lumbering instrument. Tables stretched away from the brightly lighted platform of unpainted boards and far back into the shadows people drank and chatted until the tap of the conductor's baton.

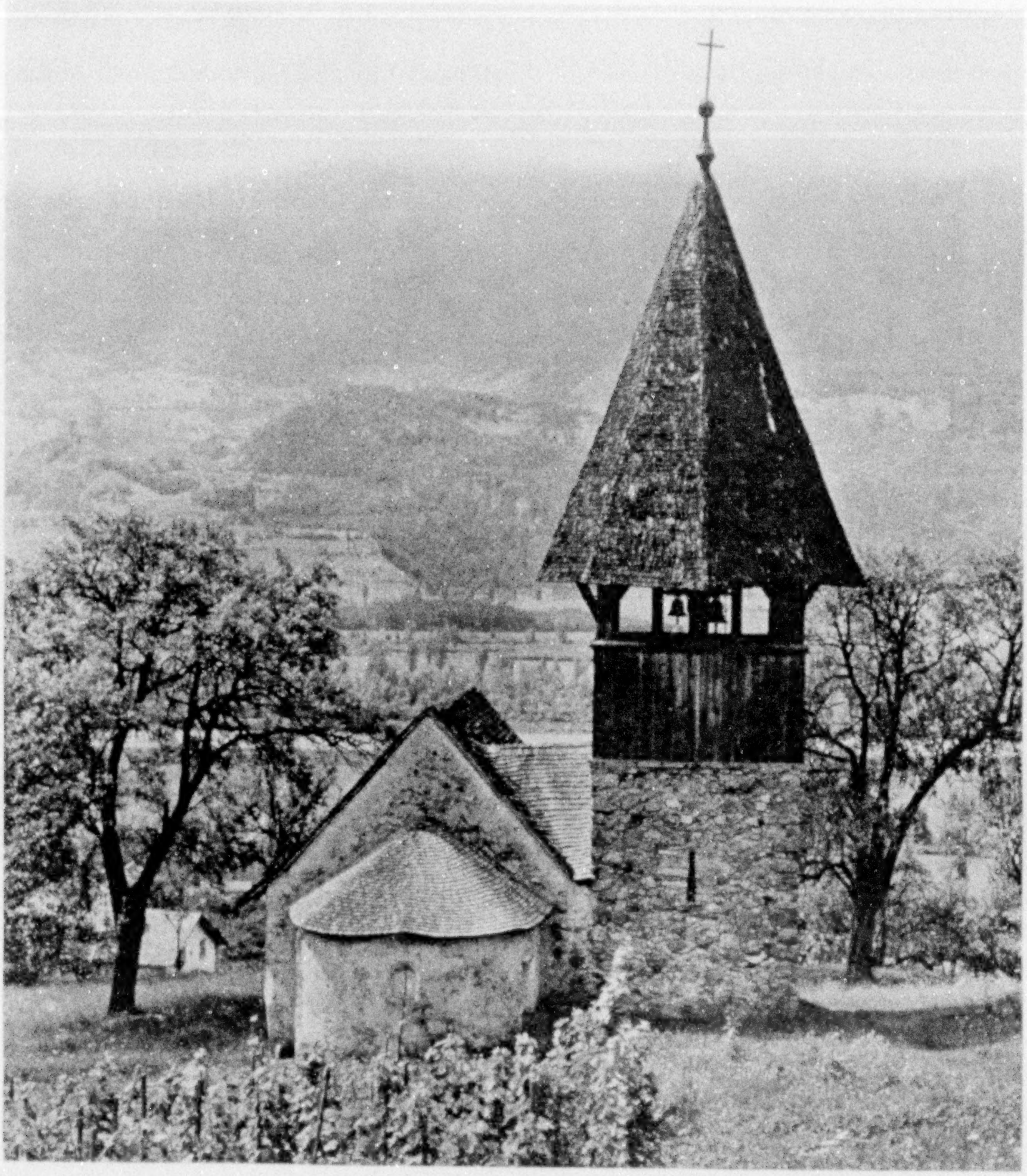
One had but to close his eyes and listen to add inches to the stature, dignity to the pose, and grace to the dress of that mixed lot of men.

My stay in Liechtenstein was nearing a close. If the weather remained cloudy on the mountain tops, I determined to leave on the morrow; but if the day dawned clear, I promised myself a final glorious tramp.

A DAY WHEN LIECHTENSTEIN SHOWED OFF

When I awoke, the water splashing into the big stone trough outside my window, had a clearer sound, as though it were no longer a rival of the eaves and the keynote of a general downpour. The sky, as I first glimpsed it from my bed, seemed peacock blue with tiny dark wisps in it. My spectacles, robbing this myopic illusion of its mystery, did not lessen its beauty.

It was the dawn on Alpine pastures beyond the Rhine. What I had taken for the mountain tops was the profile of Liechtenstein shadowed on the eastern flank of Switzerland, miles away. The dark wisps were chalets and a hillside town. The weather gods, overlooking my imperti-



ST. MAMERTUS CHAPEL IS THE OLDEST CHRISTIAN BUILDING IN LIECHTENSTEIN

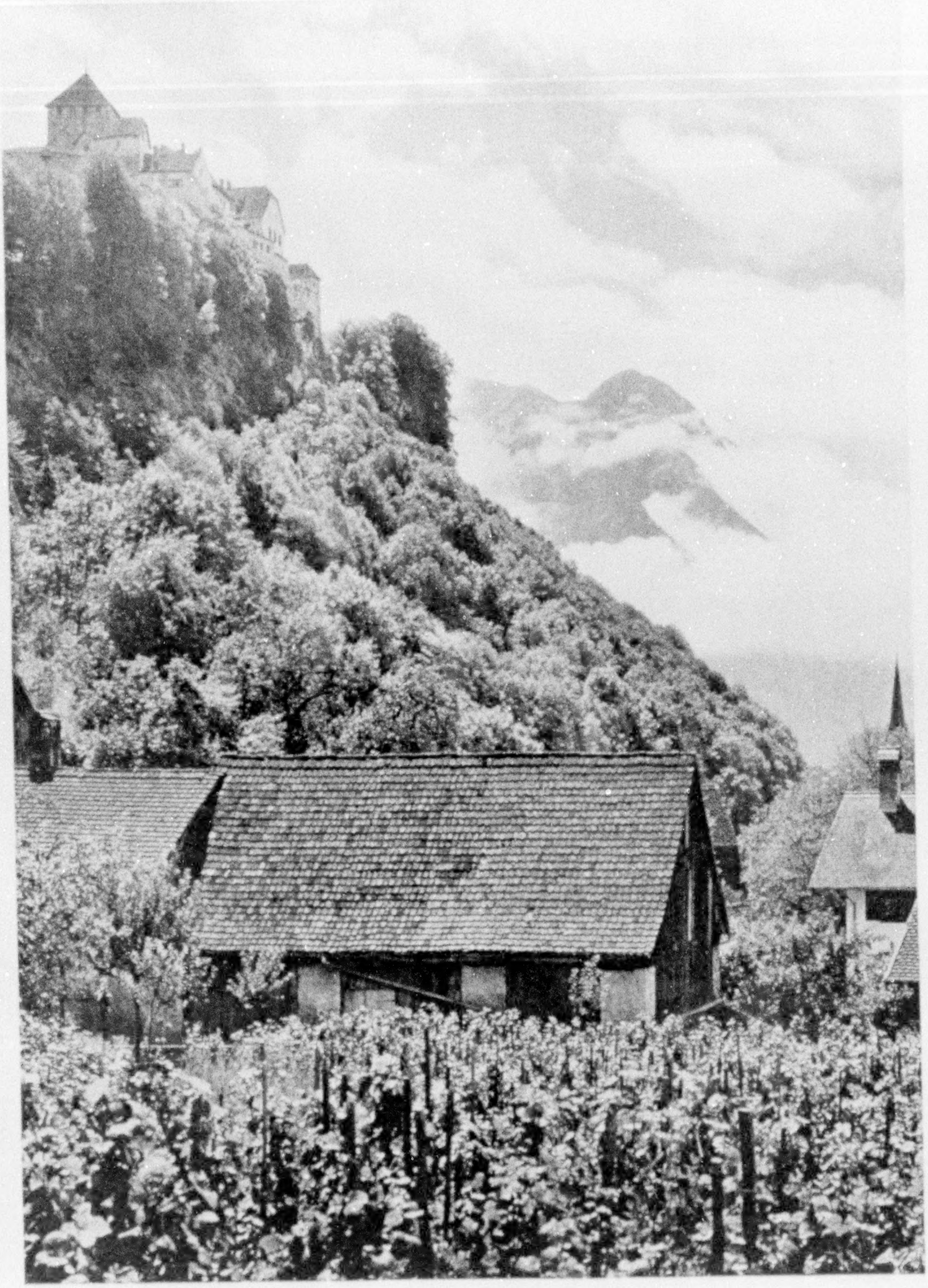
In ancient times there was a Roman camp on the site of Triesen, near which this sylvan chapel stands, but a landslide wiped it out. The dike-tamed Rhine crosses the middle distance and the eastward slope of Switzerland lies beyond.

nence, had accepted my challenge and achieved perfection.

The cheery maid who brought chocolate and rolls had evidently sensed my eagerness to be afield, for never had breakfast appeared so promptly. Praising the weather, she pushed a cheap Spanish comb, designed for raven tresses, deeper into her blond hair.

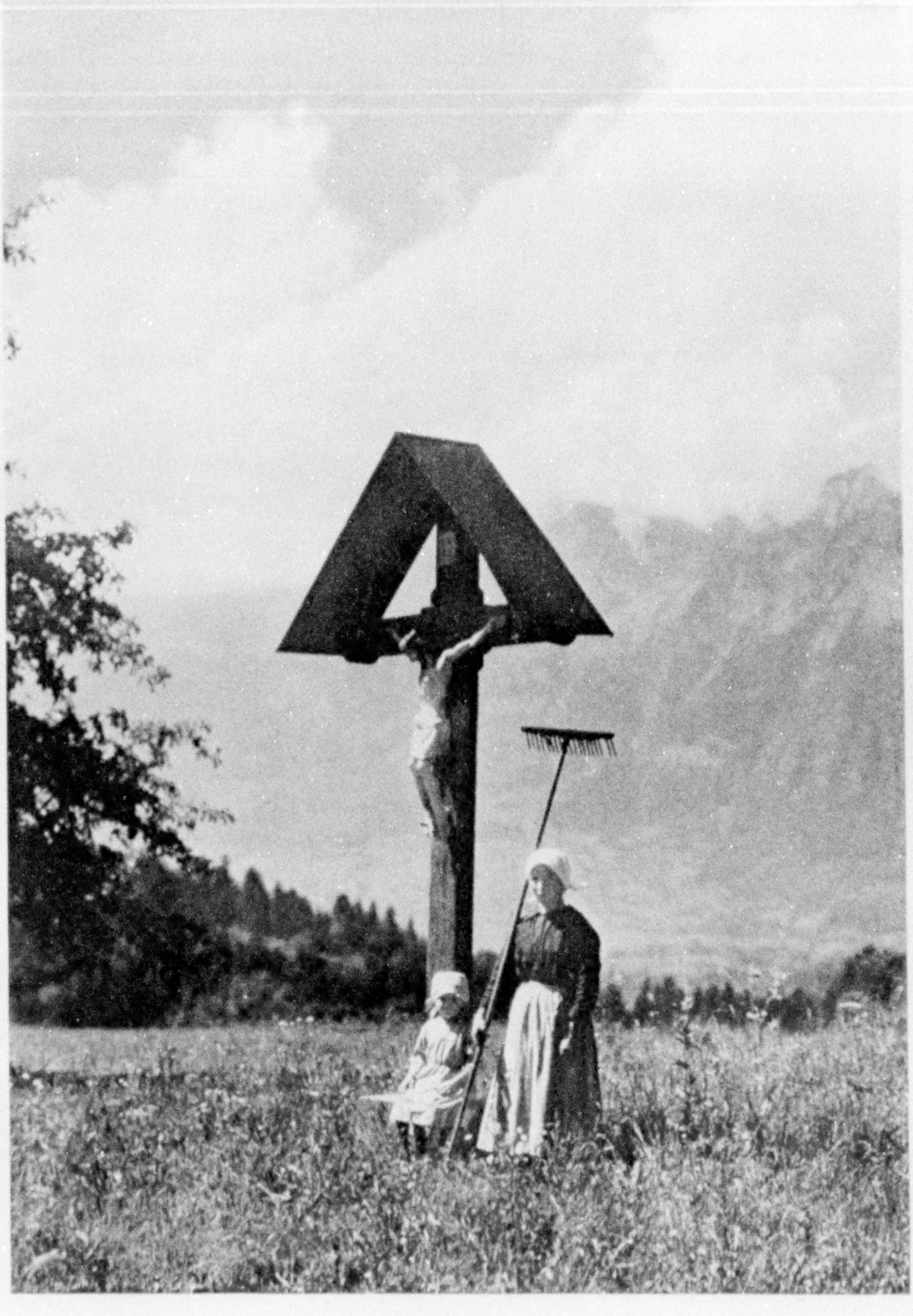
Although direct sunlight would not reach Vaduz for at least two hours, my neighbors were all abroad. The little blue-eyed friend who on my first day had thought it funny to drink from one of the brass waterspouts as I did, now jumped down from the stone fountain brim to enable me to moisten my throat before my climb.

"It's a wonderful day for photographs," proclaimed the town photographer, who practices other trades to earn a living, but envied me my camera.



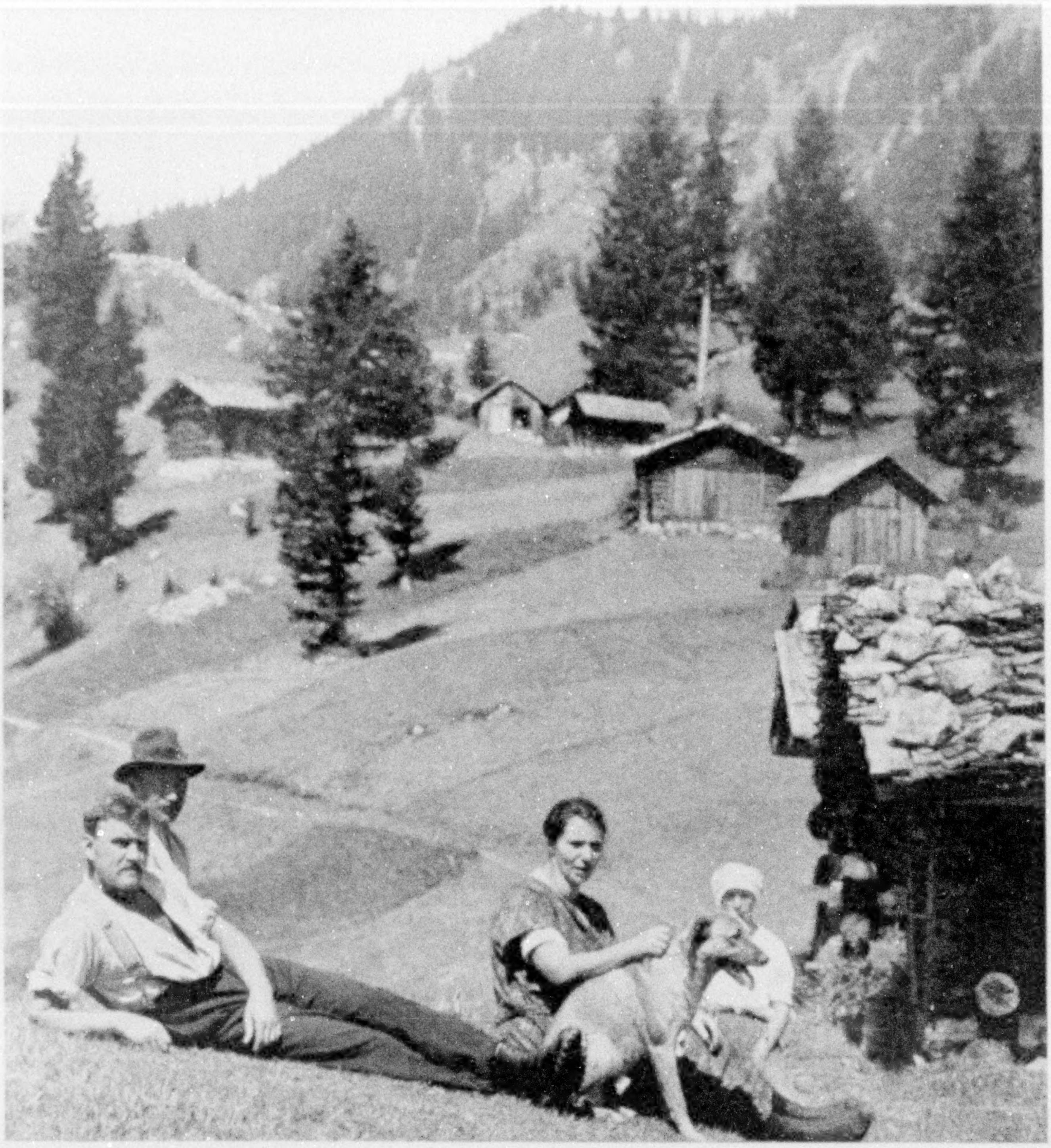
THE FORTRESS HOME OF THE LORDS OF LIECHTENSTEIN PERCHES LIKE A GUARDIAN EAGLE ABOVE THE TOWN OF VADUZ

Prince Johann II took office three years before Lincoln, but he lives in Vienna and his people see very little of him. His subjects enjoy universal suffrage, pay almost no taxes, and have done no military service since the army of eighty men reported for duty too late to take part in the Austro-Prussian War.



A WAYSIDE SHRINE TO THE PRINCE OF PEACE

Throughout the Principality one finds little open-air shrines or crucifixes. This one is beside the road between Mittel Schellenberg and Vorder Schellenberg, and the mountains in the background are beyond the Rhine. Tiny Liechtenstein was one of the few parts of Central Europe to escape the horrors of the World War.



A HAYING PARTY TAKING ITS NOON-DAY REST ON THE TRIESENBERG

These little huts, with the wood-wasting roofs held on by stones, are for storing hay. Tile roofing is rapidly being adopted and Liechtenstein, more prosperous, is becoming less picturesque. Lawnlike, hay-covered slopes alternate with rocky precipices tufted with trees.

"No letter from your wife yet," said the post-office girl, still a private citizen, since it lacked hours of opening time, but answering the unspoken question of my glance.

A climb of ten minutes brings one to the first plateau, with the old castle overhanging the town so steeply that from its drawbridge one cannot even see the main street because of the splendid beeches and oaks among which our zigzag path has led. Then one attains the carriage road to which this sylvan scramble is a short cut, and after one forest lacet leaves it behind to plunge still deeper into damp, cool shade.

Once or twice on the way to the Wildschloss, whence one looks straight down on the radiant emerald which is a distant storage tank for an electric plant, the trees give way to coarse mountain grass. The descending line of sunlight, creeping toward us from across the valley, has only just attained the Rhine and the air is still refreshingly cool.

After an hour and a quarter of climbing, an opening between the trees reveals the second plateau, its rugged western face hidden by giant trees, but its top carpeted in softest green. There is a cluster of buildings around a single home and at the far side potato fields with mauve and white blossoms.

A PARADISE MARRED BY MISTS

Then back into the forest and up, up, up to the Gaflei *kurhaus* (sanitarium). The guests, just eating breakfast, stare at one who has ascended from Vaduz so early. Some of their number, not under my necessity of making the most of that glorious day, whose sun has only just now topped the mountain peaks to beam down warmly on that parklike highland plain, are just starting out for the Fürstensteig, a savage, broken path along a savage, broken mountain side.

If Gaflei could rid itself of the mists that hide it for days on end, it would be paradise. Within an hour or two of its comfortable chairs one can get all the climbing most men want and look off to peaks whose farther sides, though better known, are no more beautiful. St. Gallen, the Grisons, the Vorarlberg, the Lake of Constance, Mount Sentis, the wall of rock and snow behind Ragaz and Chur, the softly sloping mountain mass whose farther face drops to the Wallensee like the background of a Norwegian fjord—there is scenery enough when it can be seen. To-day the atmosphere is as clear as the ringing of a distant convent bell among the hills of Umbria.

Before the World War the Fürstensteig was a well-protected path bound to the barren rock by iron tubing. It must have been thrilling even then. Many of the iron barriers have since been swept away by storm and avalanche.

Why, at an altitude of more than 6,000 feet, at the head of a narrow, tremulous rock staircase, must one walk into a cow pasture, green with grass, past a sign asking one to close the gate, so that the cattle will not wander from paradise to inferno?

Ten minutes downhill and up a shale slope by zigzags so steep that one's feet slip and one looks the length of Liechtenstein. The Samina Valley is on the left and the backbone of the country reaches out toward the Falknis, past the Sücca *kurhaus*, which is our luncheon objective. That delightful haven, apparently so near, is not reached for nearly two hours.

During my stay in Liechtenstein there was much rain, but even in dry seasons there is water and waterpower everywhere. The electric lights in our inn were never turned off, since one pays by the lamp rather than by the watt or hour.

If Liechtenstein utilized all its waterpower it would have to export much of its electric current. Water pours down the face of the land in torrents; waterfalls and trickling streams intertwine, and one is seldom out of hearing of their voices; but I hardly expected to find deep bogs along the backbone of the land.

The hoofs of cattle have plowed the hilltop into deep pockets, and I soaked my shoes more along the mountain crest than I had in the peat bogs of the low country. A herd resting on Liechtenstein's Pilatus, a mile in the air, with the landscape sloping away in all directions, was ankle-deep in mud.

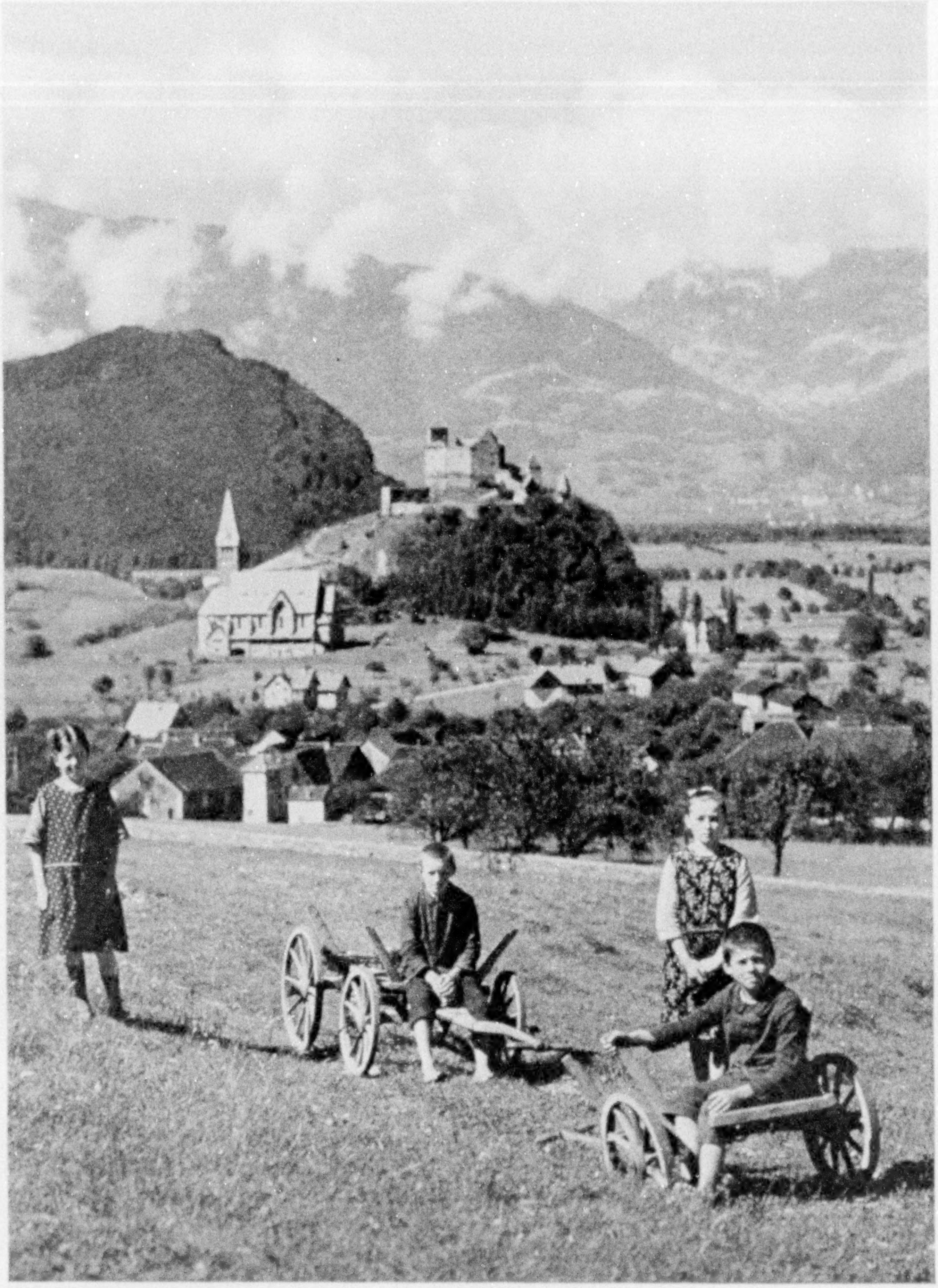
Over the stable doors are small wooden plaques bearing the I. H. S., superimposed on a cross, with which Christians have long been familiar. Each year a priest visits this and other dairy regions and puts up these "In Hoc Signo" plaques as a blessing on the herd.

From the Hellwangspitze one has a marvelous view along the upper Samina Valley. Halfway along on the left there is what appears to be an immense polo field, velvet-smooth and of purest green. Around it stand small huts. Just beyond this seemingly level expanse the Malbun dashes to join the Samina at Steg.

INN PROVIDES TROUGH FOR GUESTS' ABLUTIONS

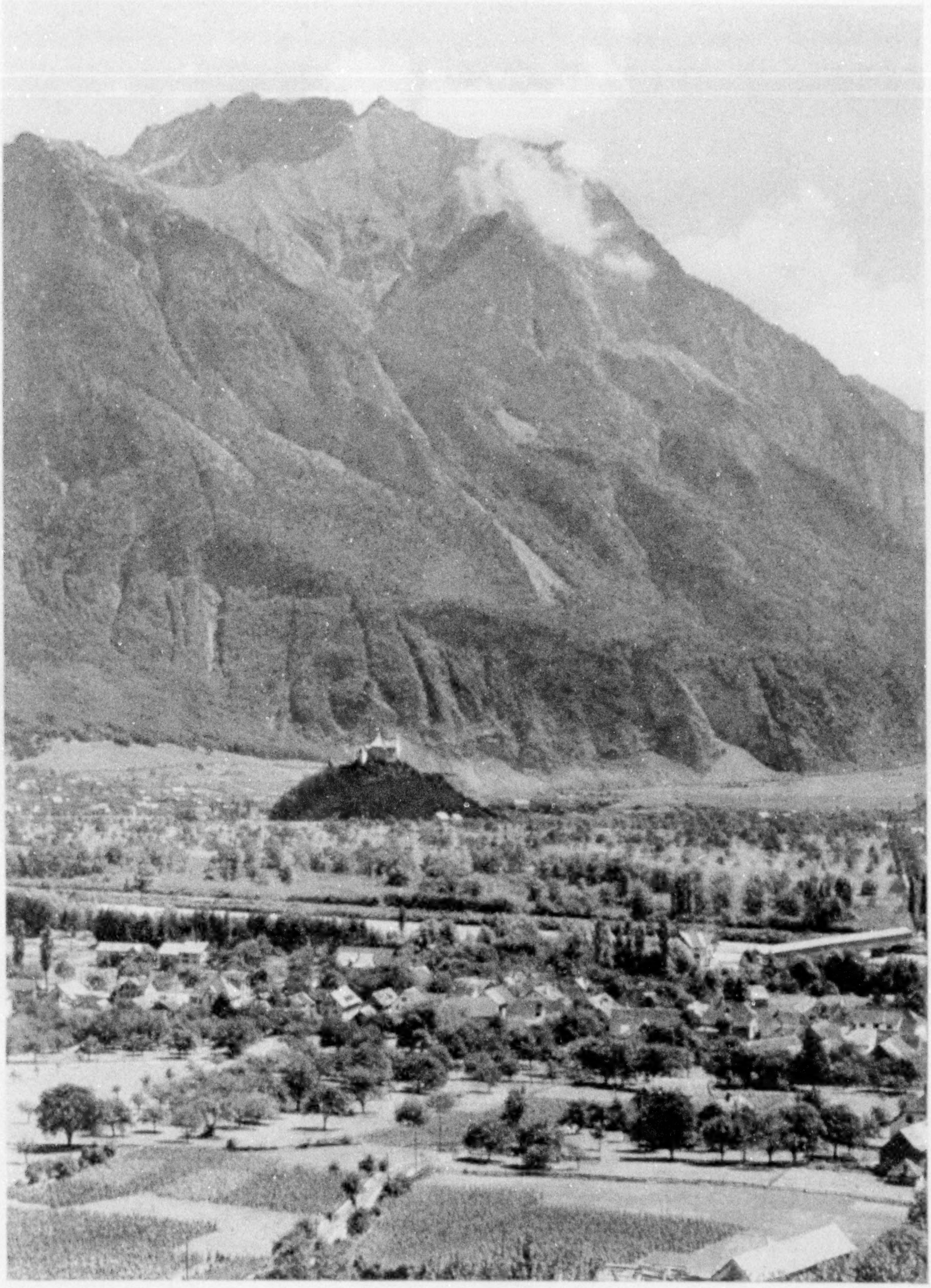
It was past noon when I reached the kurhaus at Succa. My former visit had been on a day when one played hide-and-seek with mist and rain. I entered the barnyard, washed my face at the trough, and mounted the stairs to the open-air dining room.

What a cheery greeting! "You *have* come back," said my hostess, "and it is really good weather this time." After seven hours of climbing, this friendliness was like rare wine. Personality seasons food as well as life, and at a mountain kurhaus in Liechtenstein it is a common sauce.



CHILD LIFE HAS A STAGE-SET ASPECT HERE

Above Balzers rises the castle of Gutenberg, which withstood a Swiss bombardment in 1499. A local artist, with admirable taste, has transformed it into a hotel. To pass its doors is to enter the age of pewter tankards, hand-forged hinges, and hand-illuminated tomes.



LOOKING ACROSS THE RHINE TOWARD THE MOUNTAINS OF LIECHTENSTEIN

In the center is Burg Gutenberg, once a fortress, now a museumlike hotel. In the foreground the town of Trübbach shoestrings along the Swiss frontier road. One of the four bridges between Switzerland and Liechtenstein is at the right.

On reaching Steg I found the polo field a mountainous place. This level lawn, as it seemed from the mountains above, mounted sharply from the river and was full of emerald ravines.

At the spot where the clear Malbun bursts into the valley, a tiny whitewashed chapel almost blocks the narrow exit. For the next half mile this vale is charming in its combination of rock mass and waterfall, of small, green-velvet patches and dense woods.

After a while one turns to the right and arrives at the Malbun kurhaus, a huge chalet of brownish red isolated in a vast amphitheater which furnishes a splendid setting for winter sports. Beyond it is a grassy saucer devoid of trees, but dotted with hay huts and stables. A short climb carries one across into Austria. It was after 3 o'clock, and ten miles of ups and downs filled the zigzag route to Vaduz.

On returning to Sücca, I found the cattle coming home along the hills to the music of soft-toned bells. These cows are from the Triesenberg or even from the Rhine Valley, but between June and September are pastured in the Samina Valley and stabled at Bargella or Sücca.

The milk is sent over the pass each day, an hour and a half to Triesenberg town or even farther. Other cattle graze near Aelple, Gapfahl, and Valüna, but as it is too far to send the milk over the ridge, butter and cheese are made there. While the cows have taken their appetites and chores over the pass, the Triesenberg folk tend their gardens and cut the hay crop.

The tactics of having covered the ground before now stood me in good stead. An insignificant climb would bring me to the tunnel; thence the path lay downhill almost all the way. So it was with that cheery feeling of something accomplished and a familiar road that I rested at that homey place while the shadows of the pines slid down the eastern slope.

A tiring scramble along the marvelous trail to Gaflei stirred my senses anew. Never do I remember so pure and clear a light. Seldom have I looked upon such charming scenes as those glimpsed from the path to Gaflei.

Not a touch of the haze which almost hid the Rhine had reached the upper mountain slopes. The red-tiled roof of the memorial church at Balzers was mercifully veiled, but upon the mountain huts and stables nearer at hand one could count the heavy stones which hold the thick shingles in place.

MAKING HAY ON STEEP SLOPES

All about that steep landscape the people were still making hay. In seemingly inaccessible spots oxcarts and hand-drawn sledges were piled high, and in one place two laughing children came sliding down a steep slope in a hay nest which rapidly increased in size.

At Gaflei some of my fellows of the rough and rugged trail were drinking tall glasses of rich milk. In the dining room, piano and violin were harmonizing pleasantly, and on one of the walls was a rhymed rule of conduct for this often rainy resort nearly a mile above sea level:

"Good humor's not rare
When the weather is fair,
But don't play dunce
And lose it in the rain."

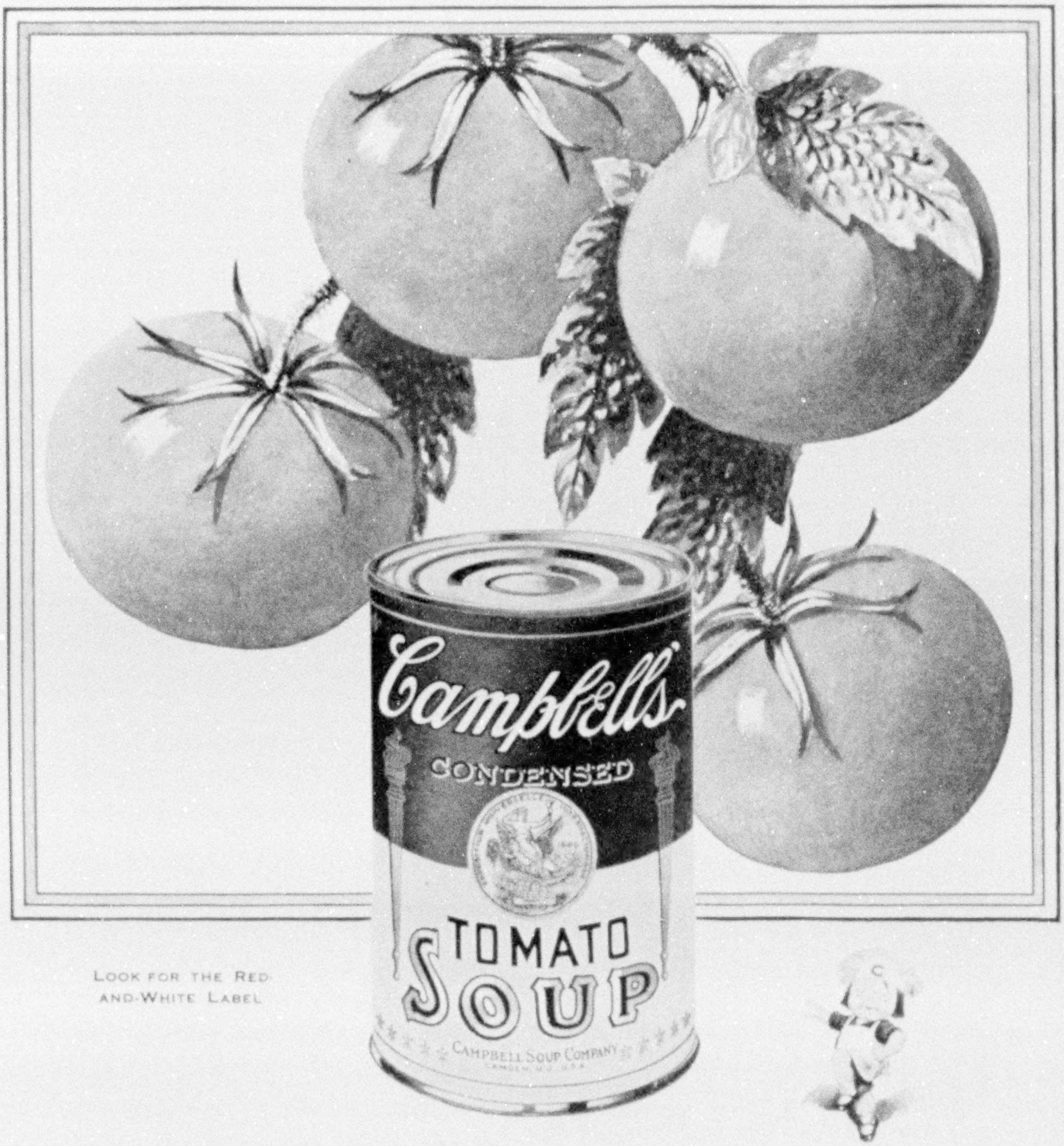
The clear evening light on the mountain side lured me by the carriage road to Masescha, one plateau farther down from Gaflei, and to Rothenboden, whence a short route runs to Triesenberg. As I entered the forest below the Vaduz castle and passed the giant beeches, some with funerary crosses, ink-black darkness settled suddenly, as it does when the afterglow dies behind the palm trees in Ceylon.

That last evening was delightful. A motor truck load of men and women poured into the inn just after I had dined, and far into the night they stayed, a jolly party with a clear, untrained soprano and a booming bass standing out from a background of song.

When their big truck roared its "Auf Wiedersehen" to Vaduz, I awoke and heard the singing die away down the moonlit street. They were "Seeing Nellie Home." Thus ended my day in warm-hearted Liechtenstein. Already I was a little homesick for the land I would not leave until the morrow.

Perhaps Stevenson *did* sense the philosophy of travel. "The great affair is to . . . . feel the need and hitches of our life more nearly; to come down off this feather bed of civilization and find the globe granite underfoot and strewed with cutting flints. Even a holiday must be worked for."

Soup with the sunniest smile of the tomato



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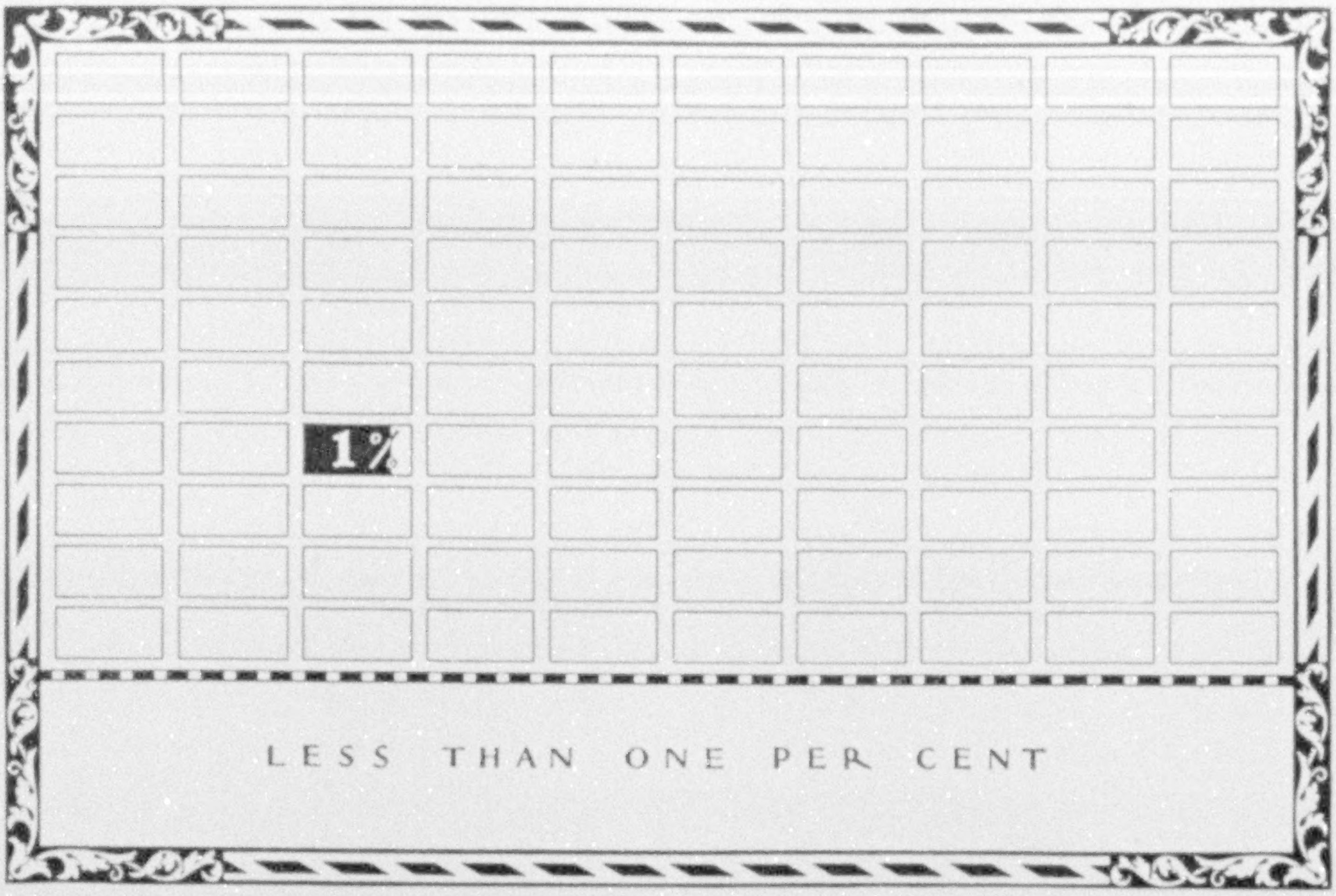
Richer still served as a Cream of Tomato Soup according to the simple directions on the label. 12 cents a can.

WITH THE MEAL OR AS A MEAL SOUP BELONGS IN THE DAILY DIET



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Its lather makes the daily shave as easy, smooth and sweet as any lather can. And while you shave it cleanses perfectly, soothes completely and leaves the skin toned up, invigorated; — leaves it buoyantly, youthfully, Fit!

Eighty-seven years of specialized study is packed in every tube.

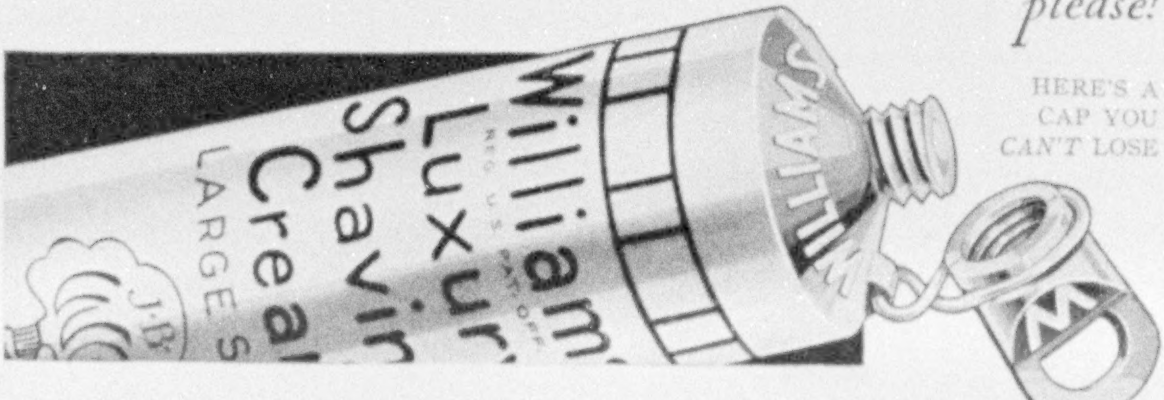
The drug clerk knows. Ask him. He'll tell you—"Oh, yes —sometimes they change........ *but they all come back to Williams*".

"Just notice the fine skins of the men who shave with Williams"

Next time say

Williams Shaving Cream

please!



HERE'S A
CAP YOU
CAN'T LOSE

TWO SIZES 35¢ and 50¢ — Ask for a FREE TRIAL SIZE, if you like.
Also, FREE TRIAL SIZE of AQUA VELVA, a scientific after-shaving liquid of remarkable virtue.
THE J. B. WILLIAMS COMPANY, DEPT. 511, GLASTONBURY, CONNECTICUT
(Canadian Factory, Montreal)

THE NEW "52" $725 to $875

GREAT NEW "62" $1095 to $1295

ILLUSTRIOUS NEW "72" $1495 to $1745

THE IMPERIAL "80" $2495 to $3595

CHRYSLER

Only Standardized Quality Gives This Greater Value

CHRYSLER cars—"52," "62," "72" and Imperial "80" — are designed and built for people who want that extra something which makes all the difference between value and performance that are merely satisfactory and value and performance that are truly distinctive.

It is natural then, that the Chrysler should make irresistible appeal to the discriminating motorists of America.

Pick-up, power and speed that amaze as much as they exhilarate—instant responsiveness to steering wheel—brakes that insure safety—most unusual riding comfort — marked freedom from mechanical cares—alluring smartness of line and color.

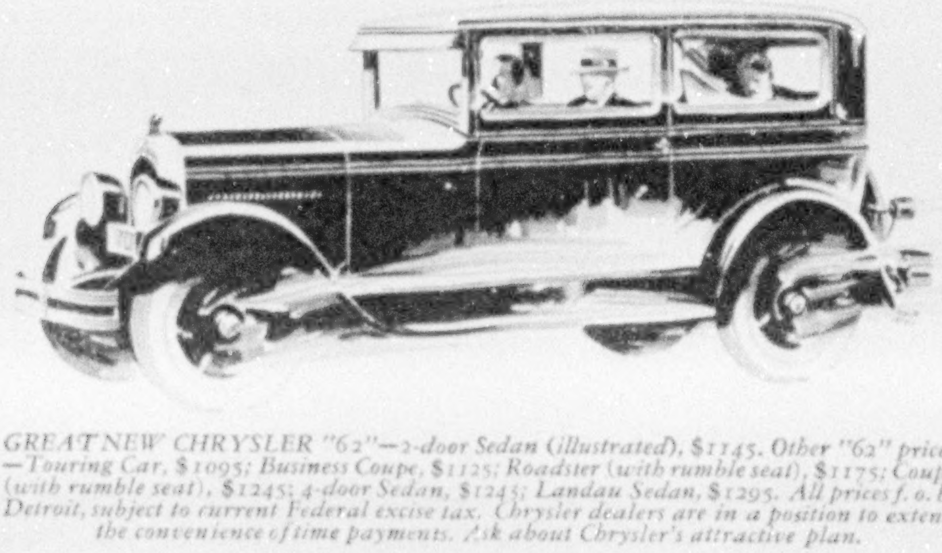
You will find these qualities vividly outstanding in every Chrysler—inbuilt and inevitable because of the unique Chrysler plan of Standardized Quality manufacture.

Through Standardized Quality each Chrysler clearly is the beneficiary of all the pioneering in design, precision in manufacturing and vast resources concentrated in the development and building of all other Chrysler models. Through it, Chrysler applies refinements required by its cars of top price to those in lower price ranges.

That the public has been quick to grasp the significance of its benefits is evidenced by the sweeping acceptance which, in three years, lifted Chrysler from 27th to 4th place.

CHRYSLER PERFORMANCE
STILL FARTHER AHEAD

New Chrysler "Red-Head" Engine—designed to take full advantage of high-compression gas, is standard equipment on the roadsters of the "52," "62," "72" and sport roadster of the Imperial "80." It is also available at slight extra cost, for all other body types of these lines, as well as for earlier Chrysler cars now in use.



GREAT NEW CHRYSLER "62"—2-door Sedan (illustrated), $1145. Other "62" prices—Touring Car, $1095; Business Coupe, $1125; Roadster (with rumble seat), $1175; Coupe (with rumble seat), $1245; 4-door Sedan, $1245; Landau Sedan, $1295. All prices f. o. b. Detroit, subject to current Federal excise tax. Chrysler dealers are in a position to extend the convenience of time payments. Ask about Chrysler's attractive plan.

CHRYSLER MODEL NUMBERS MEAN MILES PER HOUR

ETHYL
BRAND OF
ANTI-KNOCK
COMPOUND
ETHYL GASOLINE
CORPORATION
NEW YORK U.S.A.
Knocks out that "knock"

Colder weather is coming—*use*

ETHYL GASOLINE

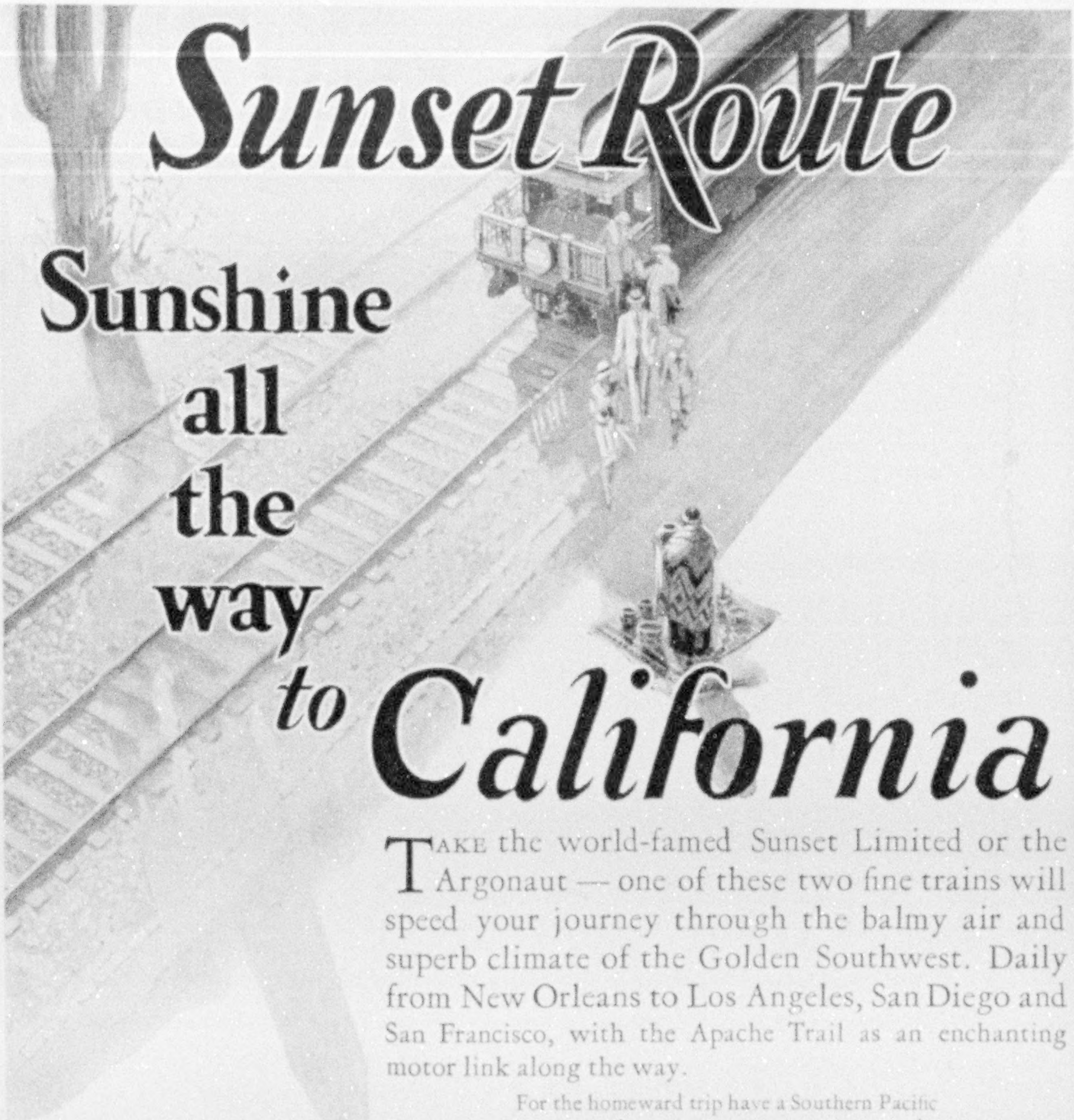
You motorists who have enjoyed the benefits of Ethyl Gasoline in warm weather will get an even better car-performance from Ethyl this fall and winter.

Ethyl gives the *extra* power you need to meet the extra strain cold weather puts on your engine. It gives the *extra* pull you need for snow and slush and muddy roads. It cuts down gear-shifting and quickens pick-up in the season when driving is hardest. Most of all, Ethyl Gasoline "knocks out that 'knock'."

And if you own one of the new high compression engines, Ethyl will give a still bigger thrill.

Ride with Ethyl the year round. *It's the superior fuel for all seasons.* On sale throughout the United States and Canada at thousands of pumps which display the "ETHYL" emblem shown above. Fill your tank today.

ETHYL GASOLINE CORPORATION - 25 Broadway, New York



Sunset Route

Sunshine all the way to California

Take the world-famed Sunset Limited or the Argonaut — one of these two fine trains will speed your journey through the balmy air and superb climate of the Golden Southwest. Daily from New Orleans to Los Angeles, San Diego and San Francisco, with the Apache Trail as an enchanting motor link along the way.

For the homeward trip have a Southern Pacific representative arrange your return over the

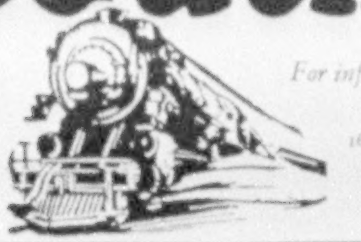
Golden State Route: through El Paso, portal to Old Mexico; via Apache Land, Kansas City, Chicago.

Overland Route: along the American River Canyon, via lovely Lake Tahoe, and across Great Salt Lake to Chicago.

Shasta Route: North via Klamath over new Cascade Line—Mt. Shasta, Crater Lake, Portland and the Pacific Northwest.

See the whole Pacific Coast from Mexico to Canada—Metropolitan Cities—Movieland—Chinatown—quaint Spanish Missions—smiling valleys.

Southern Pacific



For information and literature write, phone or call your nearest Southern Pacific representative:

NEW YORK
165 Broadway and 531 Fifth Ave. at 44th St.

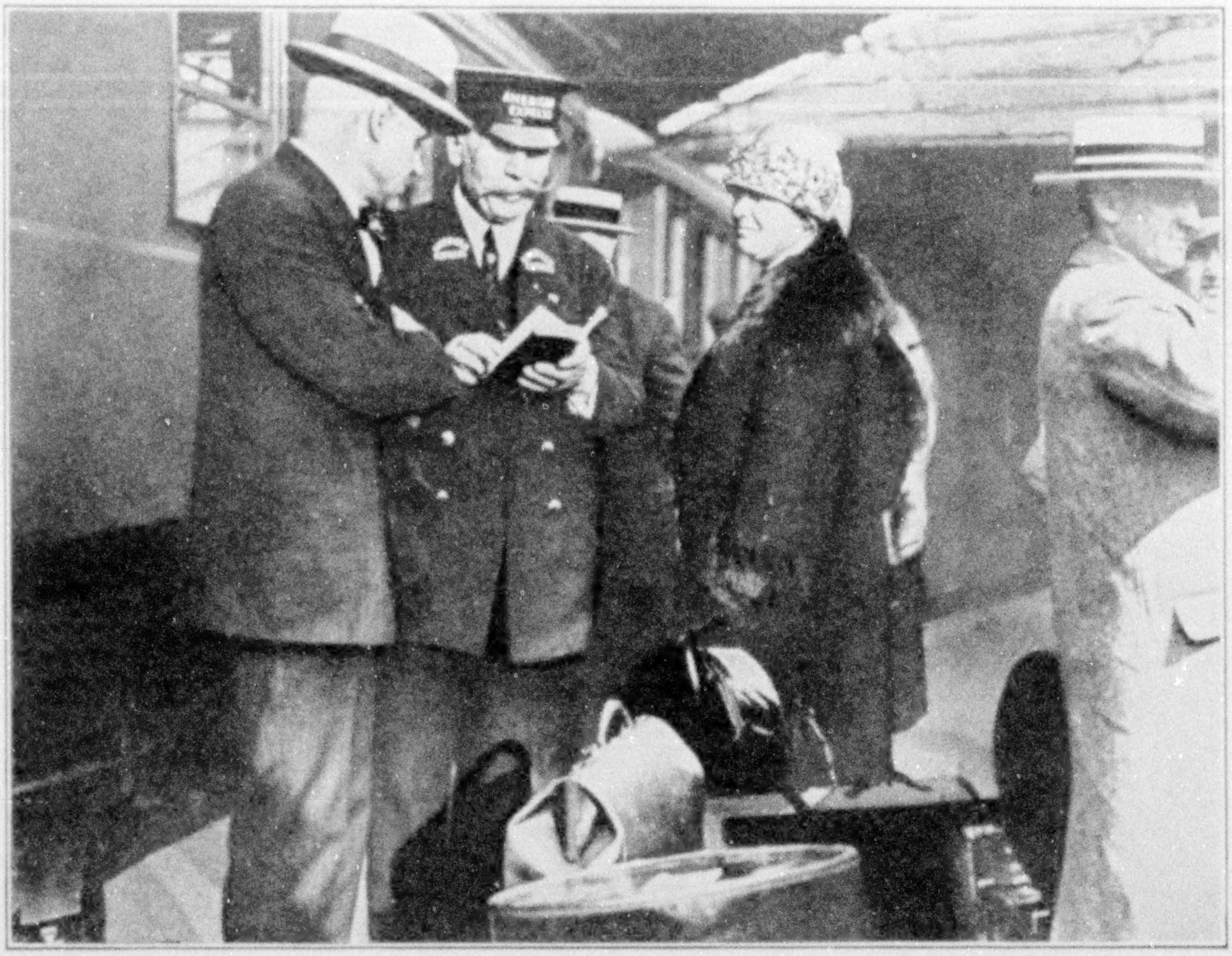
CHICAGO
33 W. Jackson Blvd.

NEW ORLEANS
Pan. Am. Bk. Bldg.

LOS ANGELES
Pacific Electric Bldg.

HOUSTON
Southern Pacific Bldg.

SAN FRANCISCO
Southern Pacific Bldg.



Safer than an iron-bound chest

A lost key or a robber's ingenuity and the strongest strong-box gives up its precious treasure

While . . . .

American Express Travelers Cheques

are without value until your *second* signature is added to their "sky blue" face. If you should lose cheques that have not been countersigned by you or exchanged for value, the American Express Company makes good your loss.

Then, too, from Piccadilly to Bombay your Travelers Cheque links you with the world service of the great American Express Company. Wherever you are, whatever your predicament, your "sky blue" Cheque entitles you to help, advice and guidance from an American Express office, representative or courier.

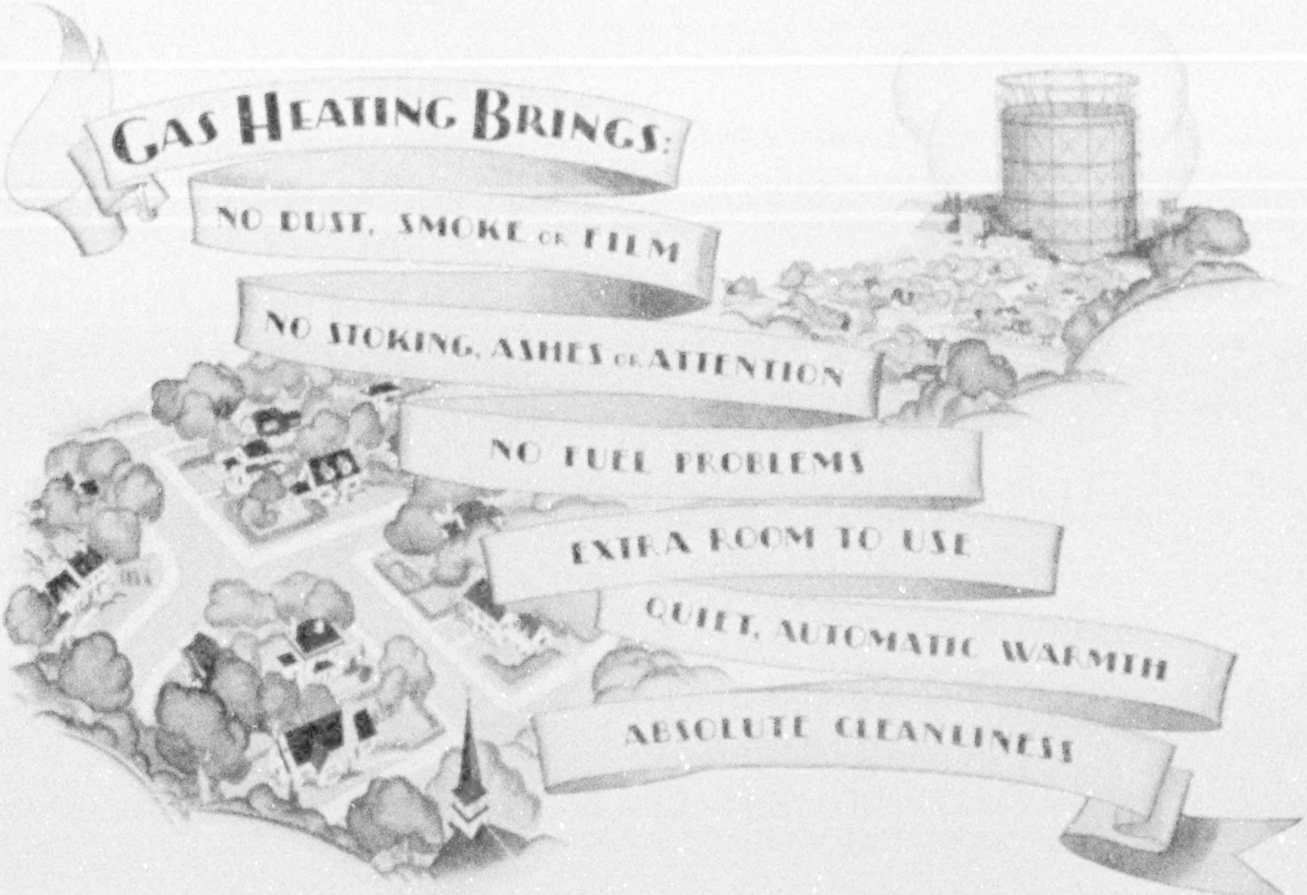
It costs you only 75 cents to change each $100 of your "long green" into the safer "sky blue" American Express Travelers Cheques. Be sure to change your money into this form of protection before you go abroad.

American Express Travelers Cheques are issued in $10, $20, $50, and $100 denominations—bound in a small, handy wallet—and cost only 75c for each $100.

Secure your steamship tickets, hotel reservations and itineraries or plan your cruise or tour through the American Express Travel Department.

FOR SALE AT 22,000 BANKS, AMERICAN EXPRESS
AND AMERICAN RAILWAY EXPRESS OFFICES

AMERICAN EXPRESS TRAVELERS CHEQUES



Heat your house with GAS!

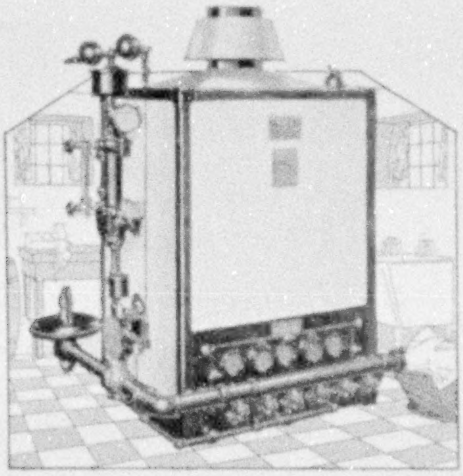
RIGHT IN FRONT of your house flows an inexhaustible supply of fuel—the cleanest, most trouble-free fuel in the world—GAS.

You can heat your whole house with that fuel. Install a good gas boiler and attach it to the endless supply which flows from the gas company's gas holder past your door. From then on the *gas* company will see that you are kept cozily warm. Weather, strikes, fuel shortages—none of these can affect *you*.

No other heating system can give you ALL the advantages of a GAS boiler!

A permanent *service*

YOU CAN'T BUY any other heating system, for instance, as dependable as gas. Back of gas heating is a great, permanent public utility. There are gas companies with a record of over 100 years' uninterrupted service. With such a guarantee, you can forget heating worries!



This is the Ideal Type 1-G boiler, the one best adapted for most homes. There is a full range of Ideal Gas Boilers, designed to heat any structure from a 3-room cottage to the largest building. Your own heating needs can be EXACTLY *suited with an Ideal Gas Boiler.*

In addition, an Ideal Gas Boiler is clean, trouble-free, automatic, compact, quiet, and efficient. Both initial cost and fuel costs are moderate, considering such extraordinary service. People who have installed GAS boilers don't take them out.

The right boiler for gas

THE IDEAL GAS BOILER is designed and built by the American Radiator Company especially to burn gas. Like any other heating boiler, it supplies steam or hot water for a radiator heating system. But—unlike every other system—when you've installed an Ideal Gas Boiler your heating cares are definitely over.

It's not too late to get an Ideal Gas Boiler *this* winter. Ask your gas company or heating contractor. Send the coupon below for an interesting booklet of information. Act *now*—and end your heating worries forever!

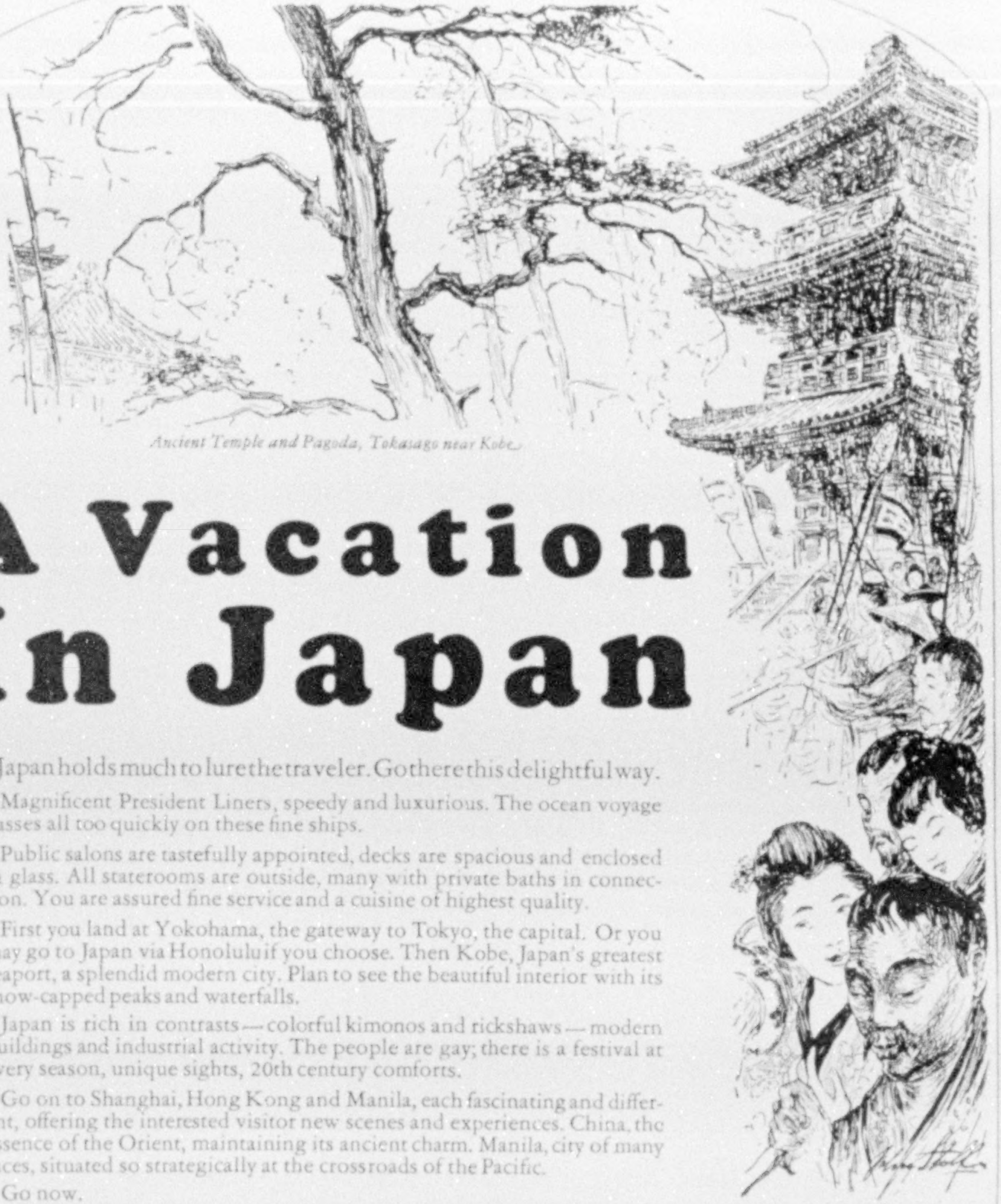
IDEAL GAS BOILERS

Product of AMERICAN RADIATOR COMPANY

AMERICAN GAS PRODUCTS CORPORATION, *Distributor*

COUPON *to* American Gas Products Corp., N-3
376 Lafayette St., New York City

Please send me more complete information about GAS house heating. (Name and address in margin below.)



Ancient Temple and Pagoda, Tokasago near Kobe

A Vacation In Japan

Japan holds much to lure the traveler. Go there this delightful way.

Magnificent President Liners, speedy and luxurious. The ocean voyage passes all too quickly on these fine ships.

Public salons are tastefully appointed, decks are spacious and enclosed in glass. All staterooms are outside, many with private baths in connection. You are assured fine service and a cuisine of highest quality.

First you land at Yokohama, the gateway to Tokyo, the capital. Or you may go to Japan via Honolulu if you choose. Then Kobe, Japan's greatest seaport, a splendid modern city. Plan to see the beautiful interior with its snow-capped peaks and waterfalls.

Japan is rich in contrasts — colorful kimonos and rickshaws — modern buildings and industrial activity. The people are gay; there is a festival at every season, unique sights, 20th century comforts.

Go on to Shanghai, Hong Kong and Manila, each fascinating and different, offering the interested visitor new scenes and experiences. China, the essence of the Orient, maintaining its ancient charm. Manila, city of many races, situated so strategically at the crossroads of the Pacific.

Go now.

A Dollar Liner sails every week from Los Angeles and San Francisco for the Orient (via Honolulu) and Round the World.

An American Mail Liner sails every two weeks from Seattle for Japan, China and Manila.

Fortnightly sailings from Boston and New York for the Orient via Havana, Panama and California. Fortnightly sailings from Naples, Genoa and Marseilles for Boston and New York.

Full information from any steamship or railroad ticket agent or

Dollar Steamship Line
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32 Broadway . . . . . New York
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Robert Dollar Bldg. . . . San Francisco, Calif.
110 S. Dearborn Street . . . Chicago, Ill.
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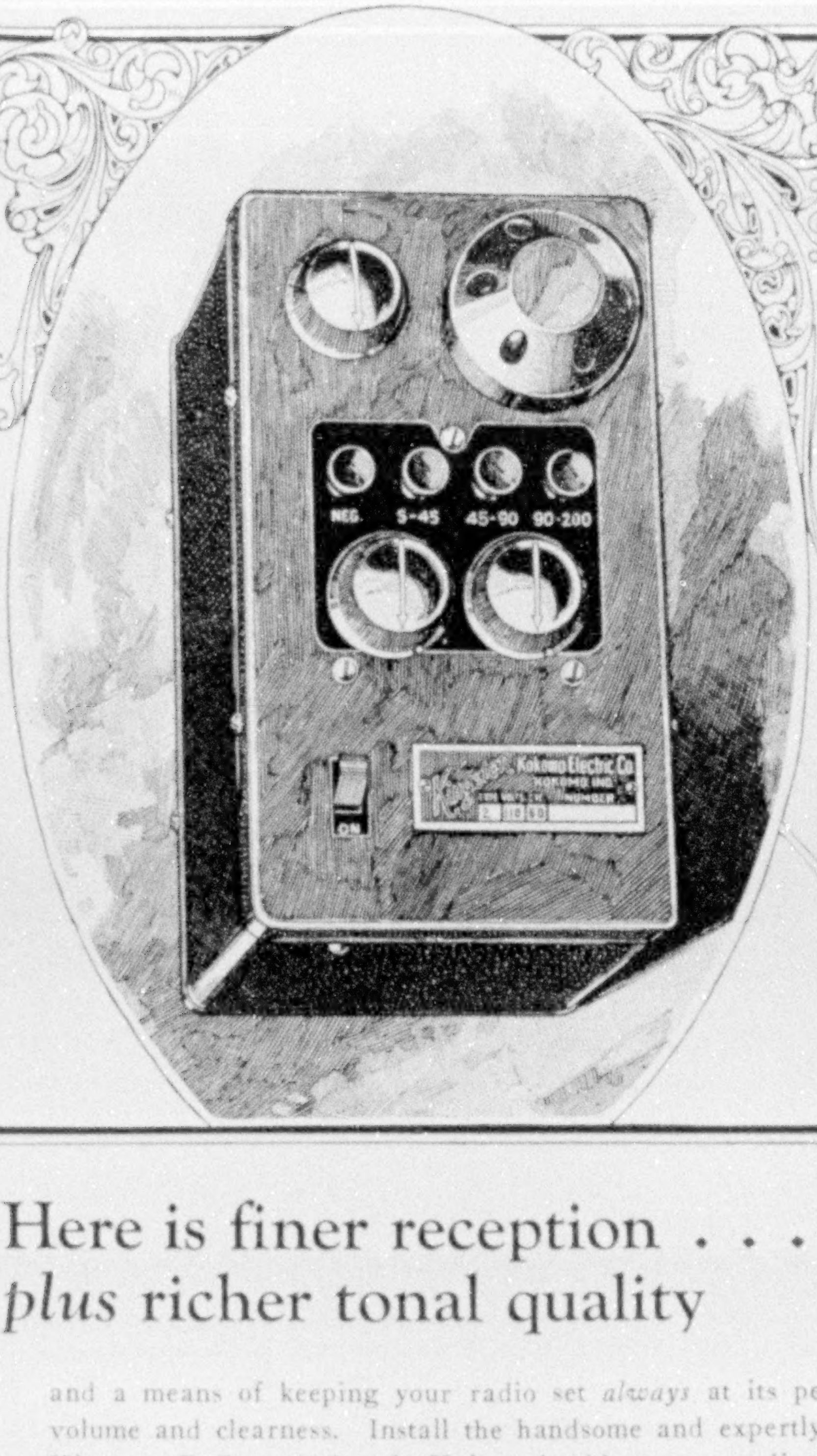
Kingston
B CURRENT SUPPLY UNIT



Price

Type 2, with manual control switch,
$35.00
Type R, with automatic switch,
$37.50

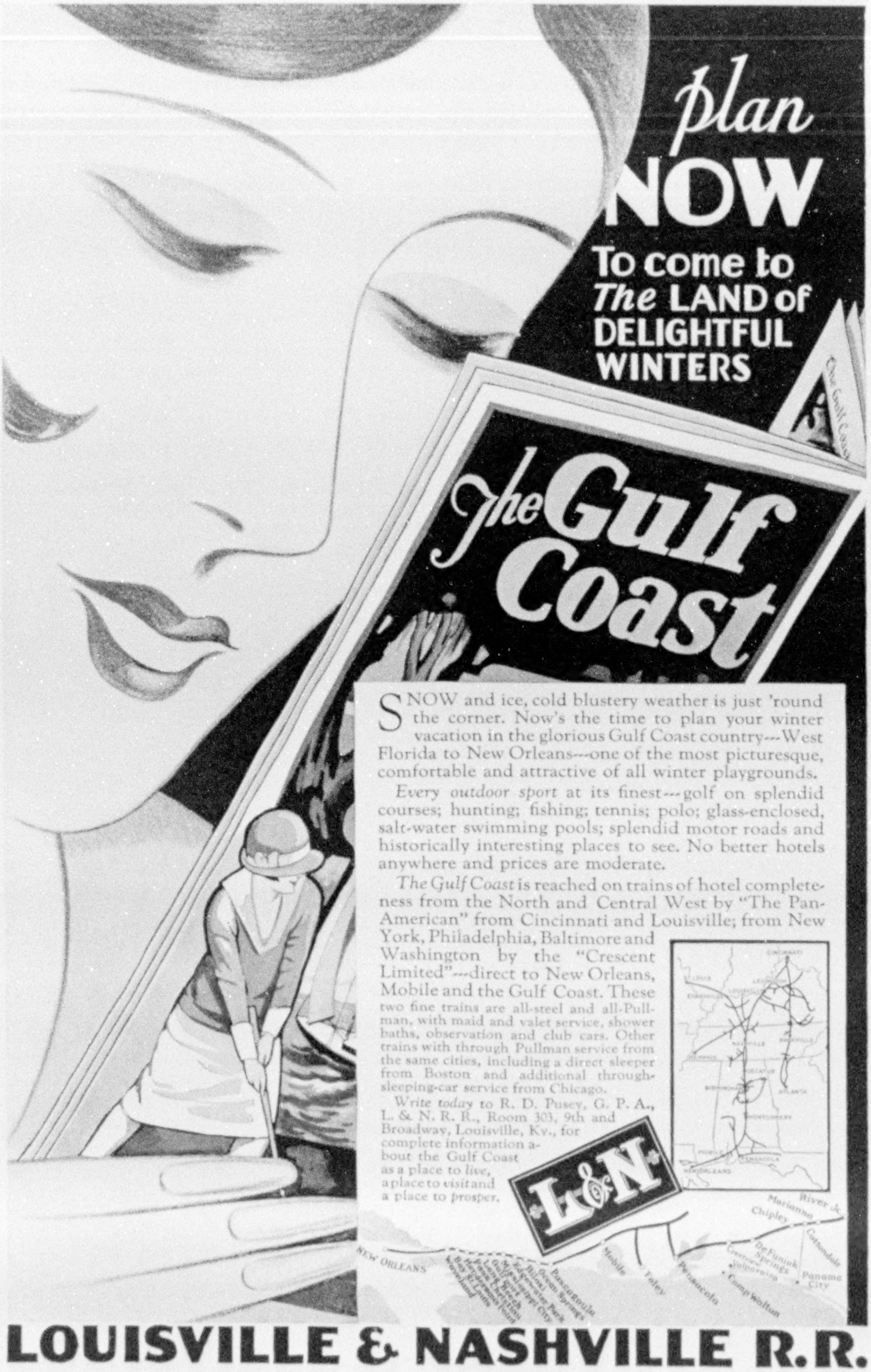
Price includes
Type BH
Raytheon Tube

Here is finer reception . . . *plus* richer tonal quality

and a means of keeping your radio set *always* at its peak of volume and clearness. Install the handsome and expertly built Kingston B Current Supply Unit and add to your radio enjoyment. Smartly finished in satin black, operating without noise or vibration, the Kingston comes to you fully guaranteed, equipped with three voltage terminals, each adjustable over a wide range, making possible any desired voltage from 5 to 200, and forever frees you from B batteries. Size: 9 inches long, 5 1-4 wide, 8 1-4 high. Get the Kingston today—a new radio thrill awaits you!

If your dealer can't supply you, ask us

The Kokomo Electric Co. - Kokomo, Ind.


plan
NOW
To come to
The LAND of
DELIGHTFUL
WINTERS
The Gulf Coast
The Gulf Coast
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Louisville
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Long Beach
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Edgewater Park
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Ocean Springs
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Chipley
Marianna
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SNOW and ice, cold blustery weather is just 'round the corner. Now's the time to plan your winter vacation in the glorious Gulf Coast country---West Florida to New Orleans---one of the most picturesque, comfortable and attractive of all winter playgrounds.

Every outdoor sport at its finest---golf on splendid courses; hunting; fishing; tennis; polo; glass-enclosed, salt-water swimming pools; splendid motor roads and historically interesting places to see. No better hotels anywhere and prices are moderate.

The Gulf Coast is reached on trains of hotel completeness from the North and Central West by "The Pan-American" from Cincinnati and Louisville; from New York, Philadelphia, Baltimore and Washington by the "Crescent Limited"---direct to New Orleans, Mobile and the Gulf Coast. These two fine trains are all-steel and all-Pullman, with maid and valet service, shower baths, observation and club cars. Other trains with through Pullman service from the same cities, including a direct sleeper from Boston and additional through-sleeping-car service from Chicago.

Write today to R. D. Pusey, G. P. A., L. & N. R. R., Room 303, 9th and Broadway, Louisville, Ky., for complete information about the Gulf Coast as a place to *live*, a place to *visit* and a place to *prosper*.

LOUISVILLE & NASHVILLE R.R.

Those Winning Smiles

That come when teeth are film free

Dentists urging NEW-FOUND WAY to tooth beauty and adequate protection against tooth and gum disorders

Send Coupon for 10-Day Tube Free

(*Above*) GRACE DALTON AND GERALD JOHNSTON ride out early to enjoy the autumn tingle in the air. Health like theirs goes hand in hand with glorious smiles kept bright by daily use of Pepsodent.

(*Above*) THE EYES OF AN AUDIENCE often wander from dancing feet —to brilliant smiles like those of Ann Pennington and Buster West in George White's "Scandals." These stars "make-up" their smiles with Pepsodent.

(*Above*) KATHRYN KOHLER, whom you've seen as "Sondra" in "An American Tragedy," goes twice each year to the dentist in protection to her priceless smile. Daily she keeps it gleaming bright by use of Pepsodent.

IF your teeth are dull, lustreless, "off color," discard old ways of brushing for a while. Try cleansing them of the dingy film ordinary brushing has failed to combat successfully; of the film to which present-day dental opinion charges many serious tooth and gum disturbances.

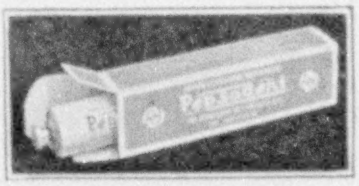
In other words, do as thousands are doing on dental advice; turn to Pepsodent. Not simply a medicated dentifrice, but a special Film-Removing Agent compounded in collaboration with world's dental authorities to REMOVE FILM FROM TEETH.

Run your tongue across your teeth. Note the film that you feel; that slippery, viscous coating. Note whether your present brushing method is failing.

Film is the great enemy of pretty teeth and gums, a chief enemy of *healthy* teeth and gums. Film clings to teeth and forms a breeding place for germs. It invites the acids of decay. It is the basis of tartar. And tartar, with germs, are the dentally *proved cause* of pyorrhea. You must remove film thoroughly *twice* daily, say dentists, from your teeth.

Pepsodent is *made* by its makers for that purpose, and urged by dentists. It removes film. It firms the gums. It multiplies the alkalinity of the mouth's saliva. It meets the dominant dental opinion of today in a dentifrice. It is the kind of dentifrice you want.

FREE—10-Day Tube



Mail coupon to

The Pepsodent Co.,
Dept. 1192. 1104 S. Wabash Ave.
Chicago, Ill., U. S. A.

Name..

Address.......................................

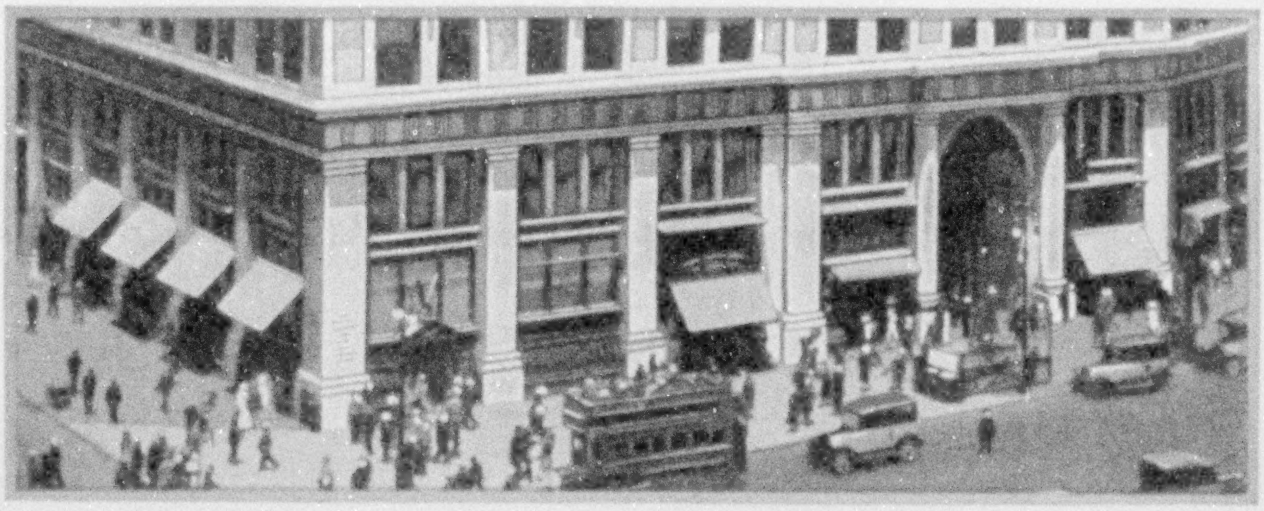
City..

Canadian Office, The Pepsodent Co.
191 George St., Toronto 2, Ont., Canada
Only one tube to a family 2639

PEPSODENT

The Quality Dentifrice — Removes Film from Teeth

If you would have your business stand above the crowd . . .



If you would give your business an address that is well known . . . that in itself lends prestige—and what business does not need prestige?—come to The Fifth Avenue Building.

Here is the ideal location for your New York office. You are surrounded by successful associates who are leaders in their respective lines. The site—200 Fifth Avenue—has been known to New York since before the civil war. Here, for many years, the old Fifth Avenue Hotel served as a meeting place for generals, statesmen and people of fashion.

The Fifth Avenue Building keeps alive this tradition of fame. Tenanted by commercial leaders, it is closely linked with conspicuous success. An atmosphere of progress prevails. Not everyone is admitted. It stands above the crowd.

Lying at the intersection of two important thoroughfares and facing historic Madison Square, this famous building puts you in immediate touch with all up-town and down-town New York. You have direct access to connecting railway terminals through a subway entrance in the building. Busses and surface lines pass the door. Elevated lines are less than two blocks away.

With such ready accessibility, pleasant surroundings—and *prestige*—it is small wonder that The Fifth Avenue Building constitutes one of the busiest buying centers in New York.

We should be pleased to show you through the building when you come to New York.

The FIFTH AVENUE BUILDING

Broadway and Fifth Avenue, at Madison Square, New York

"More than an office building"

Grand Canyon Outings

-Even a child can pick the best way to go to California

The Santa Fe is the luxurious double-track way to winterless California. In splendid comfort you speed through the Southwest.

The Chief—extra fast, extra fine, extra fare—slips smoothly over half a continent in two business days—Chicago to Los Angeles.

The Santa Fe operates four other fine trans continental trains—the California Limited, Navajo, Scout and Missionary.

Fred Harvey dining-car and station-dining room meals set the standard.

Santa Fe

mail
coupon

W. J. Black, Pass. Traf. Mgr. Santa Fe Sys. Lines
1023 Railway Exchange, Chicago, Illinois

Am interested in winter trip to California. Send me free picture-folders and advise cost of excursion ticket.

Name____________________

Address____________________

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If the mysteries of the East fascinate you—

If the age and traditions of the Old World charm you—

Surely you want to see the wonders of

SOUTH AFRICA

—a land of mystic magnificence—towering mountains, majestic waterfalls, beautiful rivers and verdant veld. The land of modern cities, native kraals, mellow sunshine and cool, invigorating climate.

The land of beautiful flowers, sylvan glades, botanical gardens and primeval forests. Where you can motor over fine roads or travel by fast, luxurious trains.

Where you can see—

Mysterious Zimbabwe Ruins
The Magic Cango Caves
Barbaric Warrior Dances
The Great Diamond and Gold Mines
Quaint Kaffir Kraals
The Mighty Drakensberg Mountains
Wonderful Victoria Falls
Speedy, Preening Ostriches
Kruger Big Game Park
and Glorious Cape Peninsula

As for travel, the South African Government Railways are internationally famous for comfort, speed, safety, convenience, dining and sleeping car service.

The several de luxe cruises to South Africa this coming winter have already booked over 2,000 Americans. Write for free booklet, "Sun Country," or send 12 cents (to cover postage) for fully illustrated travel books.

**SOUTH AFRICAN
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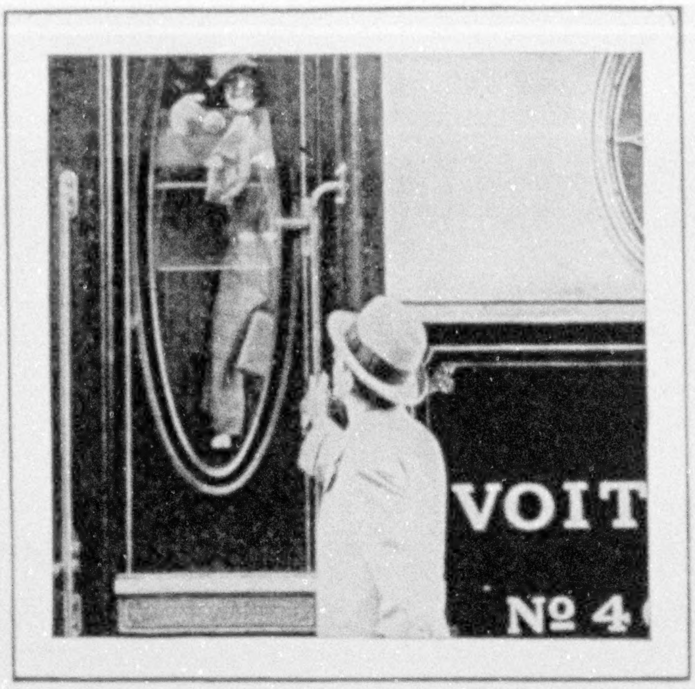
South Africa

FOR TRAVELERS



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This is the statement of Mr. Leon Danley, General Agent of the famous Compagnie Internationale des Wagons-Lits, which operates the sleeping and dining-car service on the railways of Europe.

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Buy Them at Your Bank

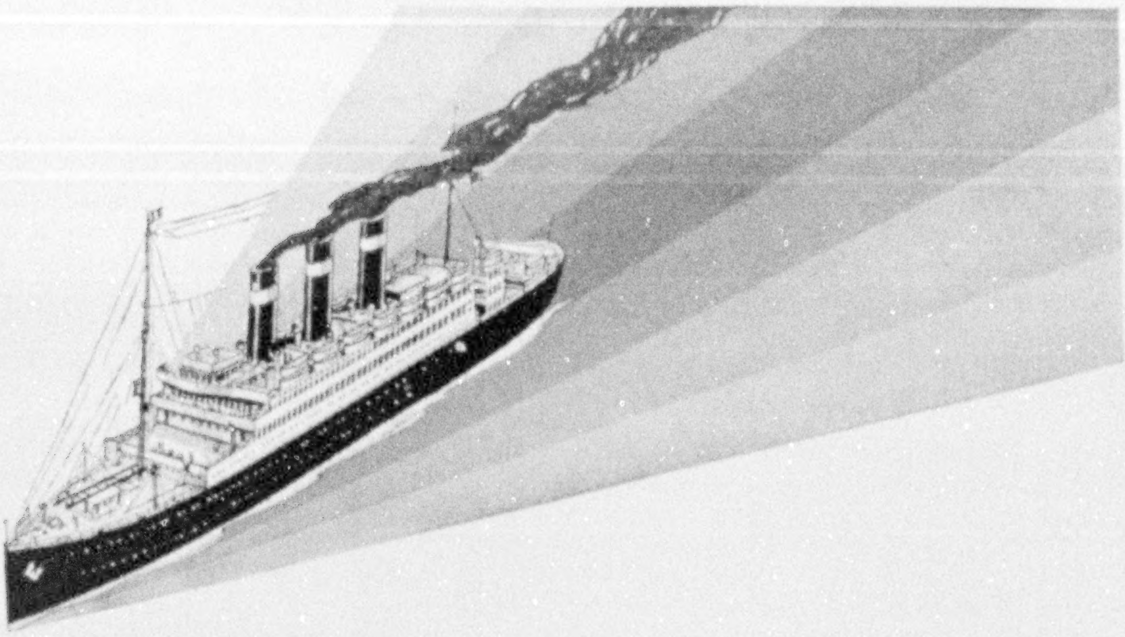
AND: *If going abroad, ask for your complimentary copy of Harry Franck's invaluable book, "All About Going Abroad," sold in bookstores for $1.*

AMERICAN BANKERS ASSOCIATION

A·B·A *Certified* CHEQUES

TRAVEL MONEY

BANKERS TRUST COMPANY, NEW YORK
Agents for the issuing banks



CRUISING the SEVEN SEAS

TO THE MEDITERRANEAN

Four 46-day voyages—a service permitting the greatest freedom in planning. Stop-overs from ship to ship or return home from a north-European port, if desired. Itinerary includes Monte Carlo, Italy, Egypt, Holy Land, Greece, etc. White Star liners *Adriatic* sailing January 7 and February 25, and the *new Laurentic* January 17 and March 6.

Apply to
White Star Line

AROUND THE WORLD on the BELGENLAND

The largest, finest liner ever to circle the globe

3 swimming pools and 2 gymnasiums, a verandah cafe and trapshooting equipment. Sounds more like a country club than an ocean liner, but it is characteristic of the unique luxury of the *Belgenland.* She really is a rare combination of home and a smart country club.

And her world itinerary? Already tried for five years and found perfect. Returning passengers pronounce it so. This year there will be no experiments, no switching, no drastic change of place or time—no need to gild the lily.

Sailing westward Dec. 14 to 65 cities in sixteen countries. 133 days over 28,000 miles. The perfect world cruise.

This cruise operated by the Red Star Line in conjunction with the American Express Co. For complete information apply to Red Star Line, No. 1 Broadway; American Express Co., 65 Broadway, New York; or other offices or agencies of either company.

TO THE WEST INDIES

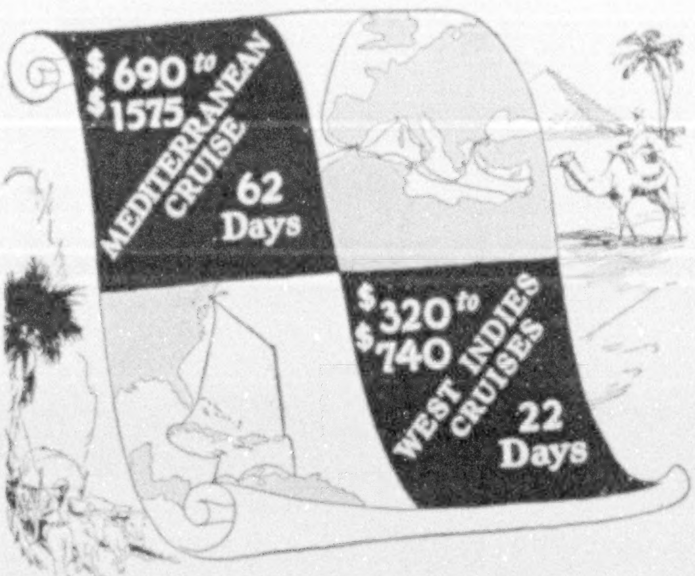
Two 22-day tours to the wonder spots of the Caribbean, including Havana, Panama Canal, the northern coast of South America, Jamaica, etc. Long enough to freshen you against the rigors of winter. Short enough for even the busiest person. A delightful ship, the great White Star liner *Calgaric* sailing from New York February 4 and March 3.

Apply to
White Star Line

WHITE STAR LINE · RED STAR LINE

INTERNATIONAL MERCANTILE MARINE COMPANY

No. 1 Broadway, New York City, our offices elsewhere, or authorized agents.



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JAMES BORING has arranged three cruises for this winter! Experienced travelers know what this means—the utmost in comfort and pleasure at minimum cost. All the inconveniences and worries removed. You cruise on a luxurious chartered ship—your home afloat. All expenses included in one fee—all arrangements made. You have nothing to do but ENJOY yourself. Which cruise for you?

Mediterranean Cruise—Feb. 8
(Third Annual Cruise)

62 wonderful days on ship and ashore. The popular new *S. S. Doric* of the White Star Line takes you to Madeira, Gibraltar, Spain, Algiers, Tunis, Malta, Athens, Constantinople, Holy Land, Egypt, Italy, the Riviera. One moderate fee (as low as $690) includes everything.

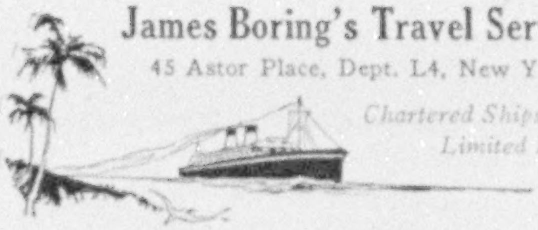
West Indies Cruises—Jan. 17 and Feb. 11

Off to the Spanish Main aboard the White Star Liner *Megantic*, especially equipped for tropical cruising. 22 enchanted days, visiting Havana, Jamaica, Colon and Panama, Colombia, Curacao, Venezuela, Porto Rico, Bermuda. Inclusive fee as low as $320. The cruise of Jan. 17 is of special interest to Shriners and the cruise of Feb. 11 will be of interest to Elks.

Send Now for Information

Memberships are limited—and James Boring's Cruises are famous. Prompt action is essential. Mail coupon or write for booklet, deck plans, rates. These are travel opportunities you should not miss.

James Boring's Travel Service, Inc.
45 Astor Place, Dept. L4, New York, N. Y.



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Limited Memberships

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Please send me, without obligation, particulars of the Cruise I have checked.

☐ Mediterranean Feb. 8, 1928 ☐ West Indies Jan. 17 ☐ West Indies Feb. 11

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UNION PACIFIC

The appealing beauty of glassware makes it ideal for gifts. Fine glassware by Heisey is always appropriate as tokens of remembrance, no matter what the occasion.

What Should South Bid?

This is the fifth and last set of six hands in a series of Bridge bidding problems by Milton C. Work. In each of these hands, South (the dealer) has bid one Spade. West has passed, North has bid two Hearts and East has passed. Now, you as South are asked to decide how you would bid each of the hands, shown below, on the second round. Send in your bids (one only to each hand) before January 2nd. Attractive prizes will be awarded to those who bid these hands correctly. Mail bids to Bridge Contest Department, A. H. Heisey & Co., Newark, Ohio.

Hand No. 25	*Hand No. 26*	*Hand No. 27*
♠A-K-J-9-8-2	♠A-K-J-9-8	♠A-K-J-3
♥8-6-4	♥Q-4	♥Q-7
♦K-J	♦A-5-3	♦K-J-4
♣A-Q	♣9-7-2	♣J-9-5-2

Hand No. 28	*Hand No. 29*	*Hand No. 30*
♠A-K-J-9-8	♠A-K-J-10-4	♠A-K-J-8-5-3
♥J-4	♥8-6-2	♥None
♦6	♦A-Q-J-10-3	♦K-Q-J-2
♣K-Q-10-8-3	♣None	♣A-10-6

Remembrances that answer dreams are suggested in wonderful profusion by our handsomely illustrated booklet, "Gifts of Glassware." Write for a copy and settle the gift question.

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Delightful to behold is the entrancing beauty of Heisey's Glassware! It simply captivates you—and fulfills the vogue of today with wondrous charming grace.

But glassware is more than eminently in vogue—it's fast becoming *the thing* to have two or three complete table services in different designs and colors—for use on different occasions.

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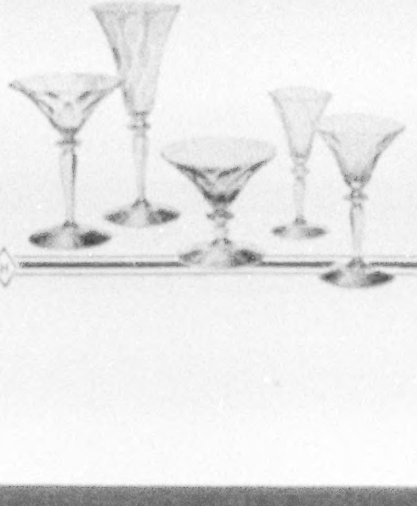

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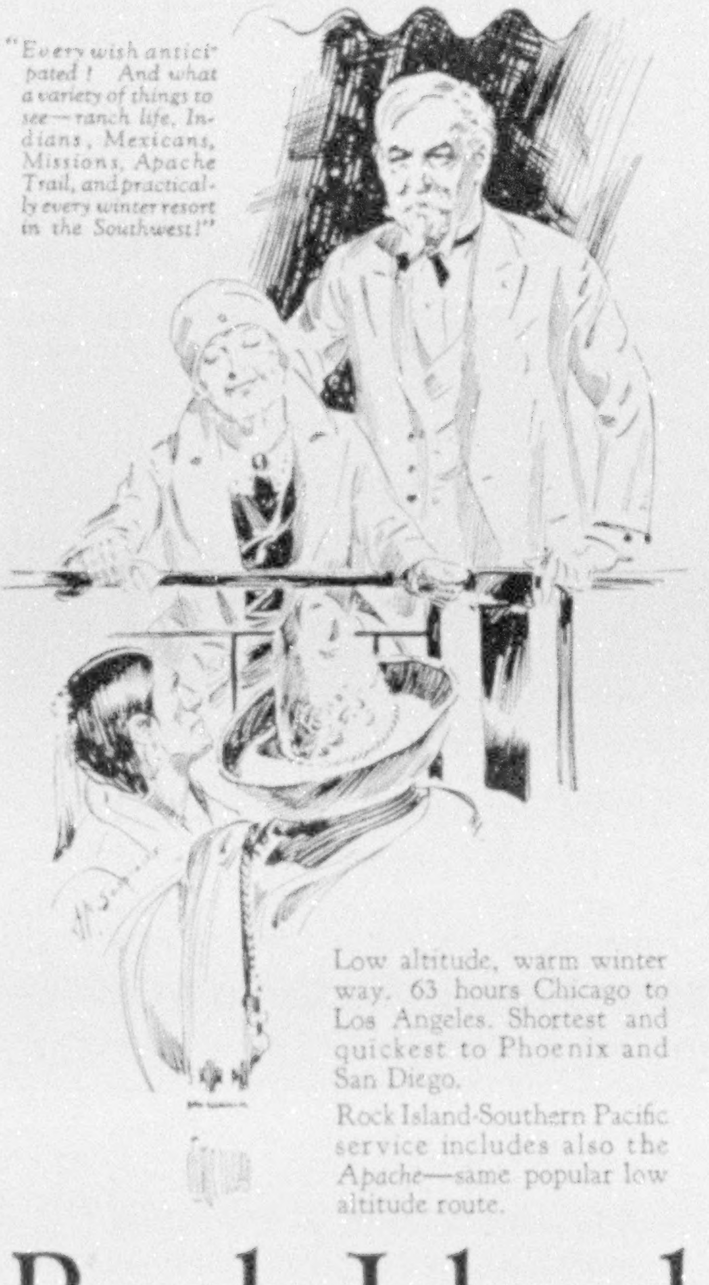
There are many interesting routes to California, but there is only one Golden State Route. There are many luxurious trains, but there is only one *Golden State Limited.*



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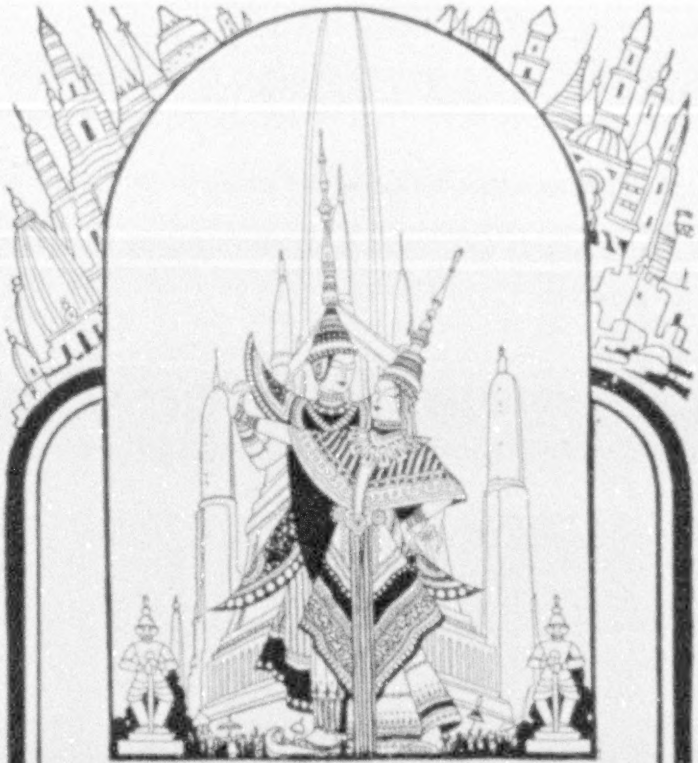

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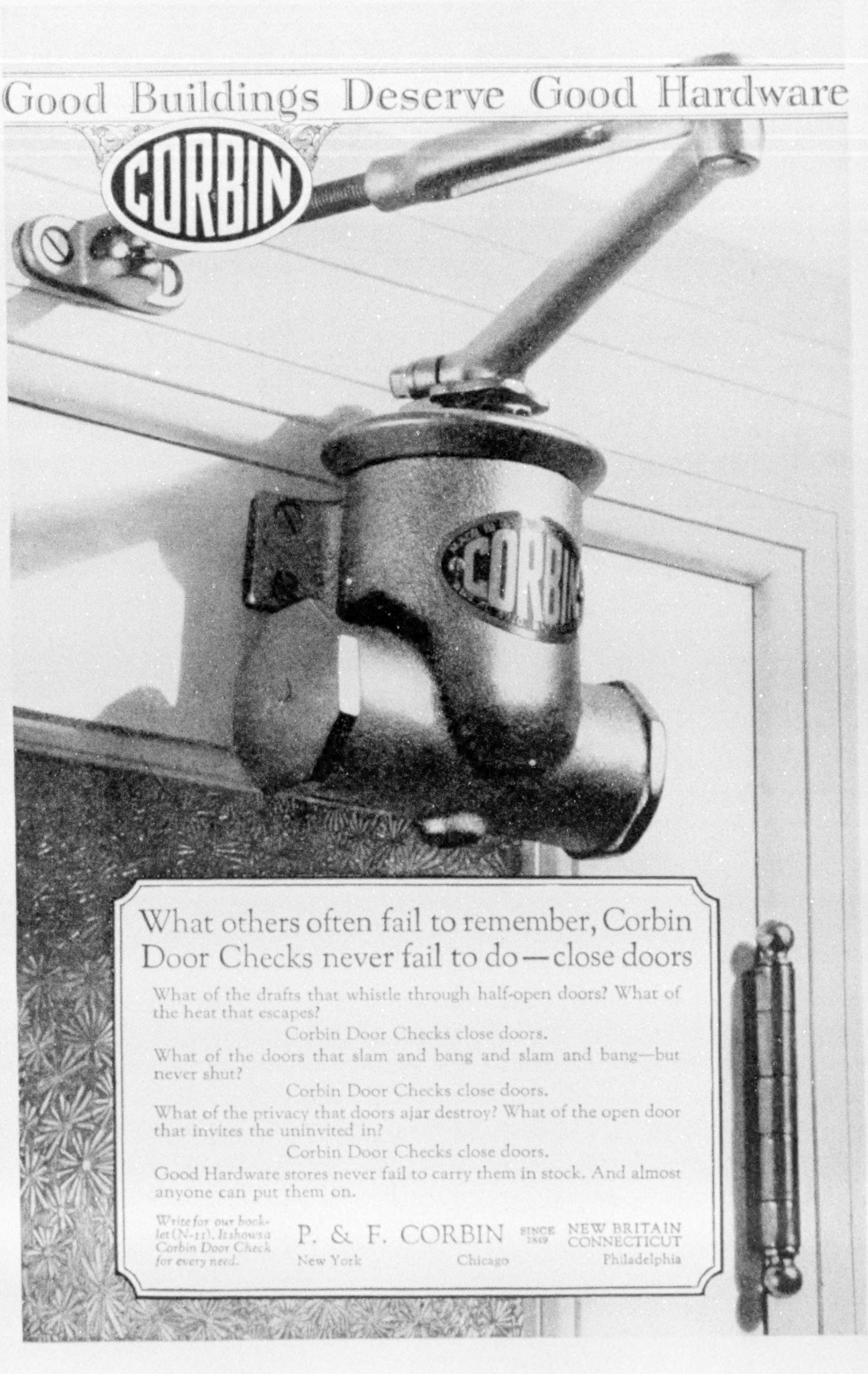
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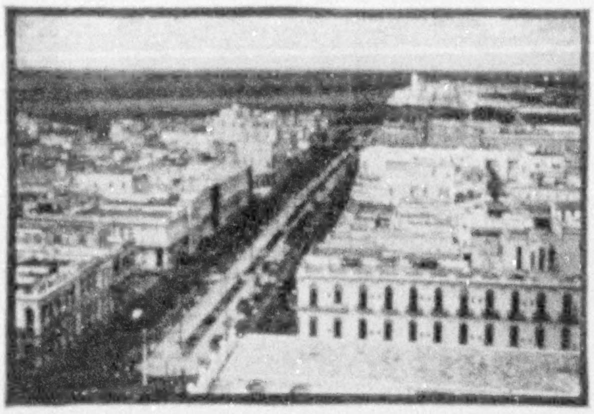

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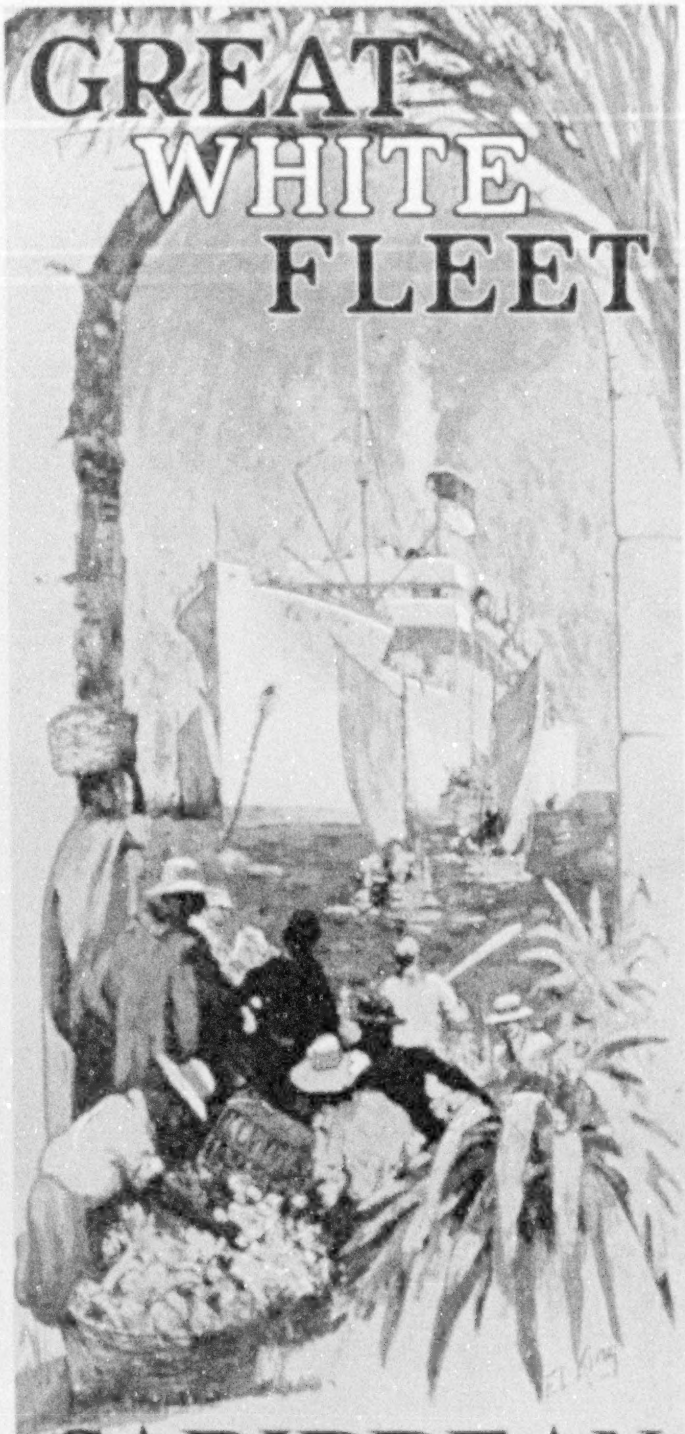

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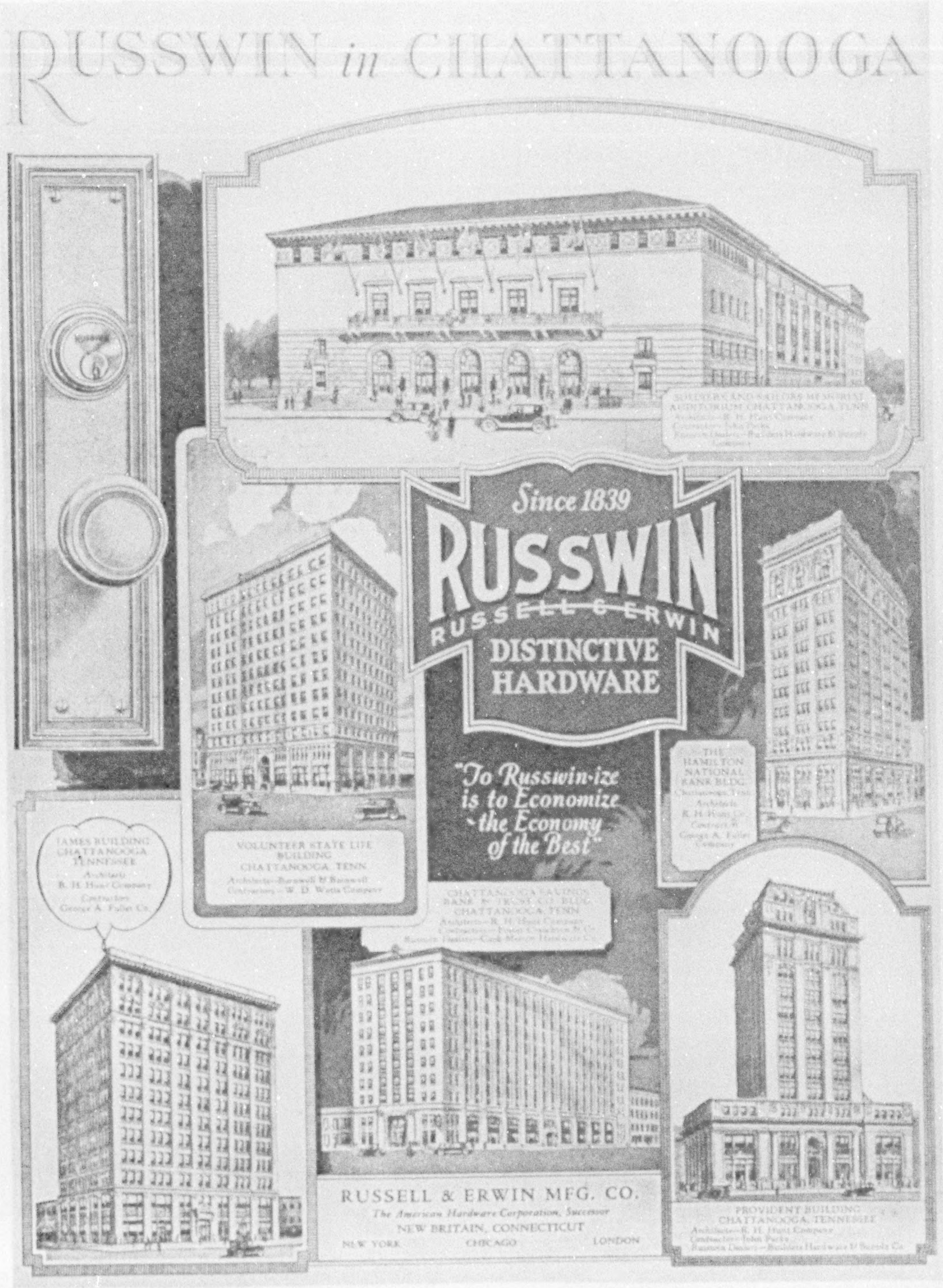

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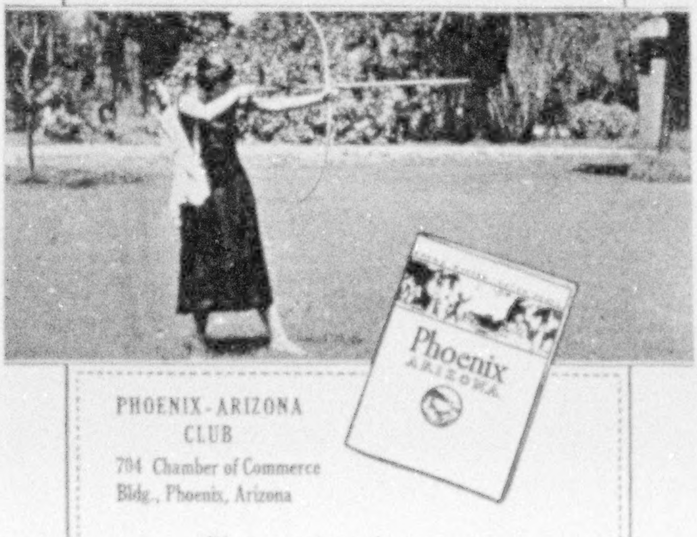

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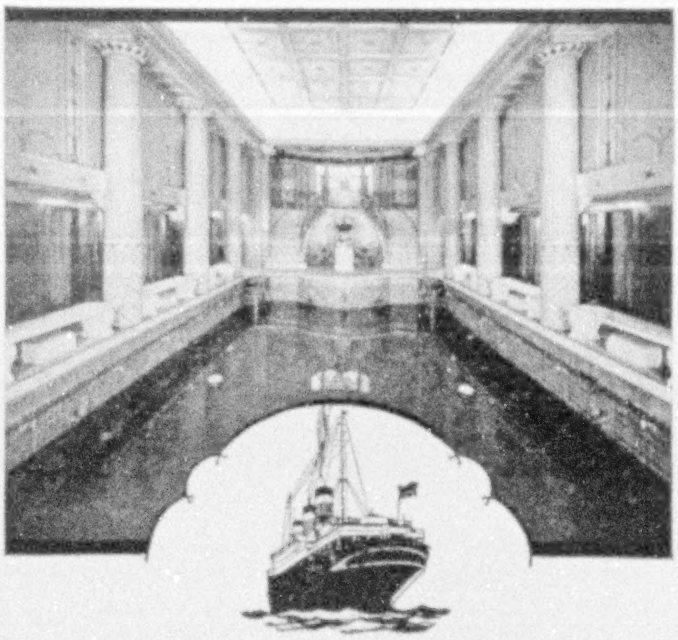

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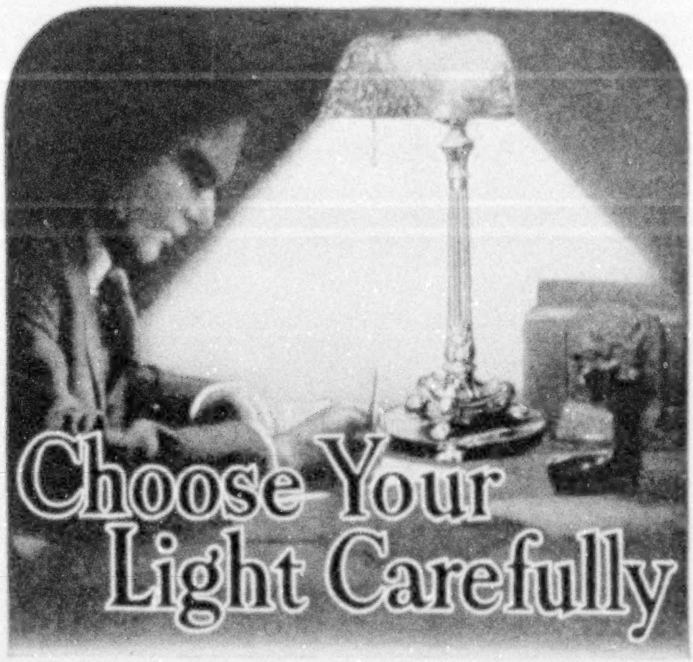

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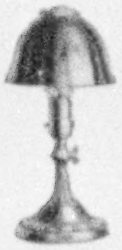

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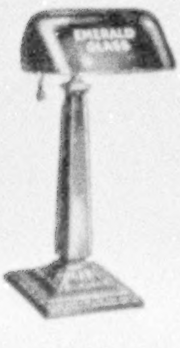

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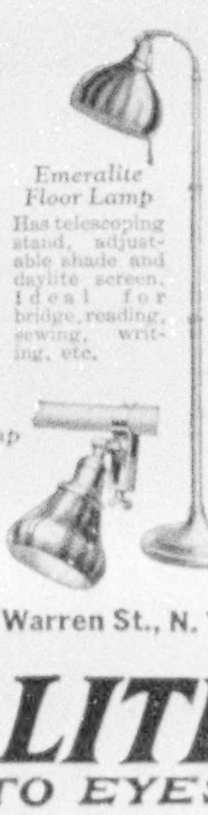

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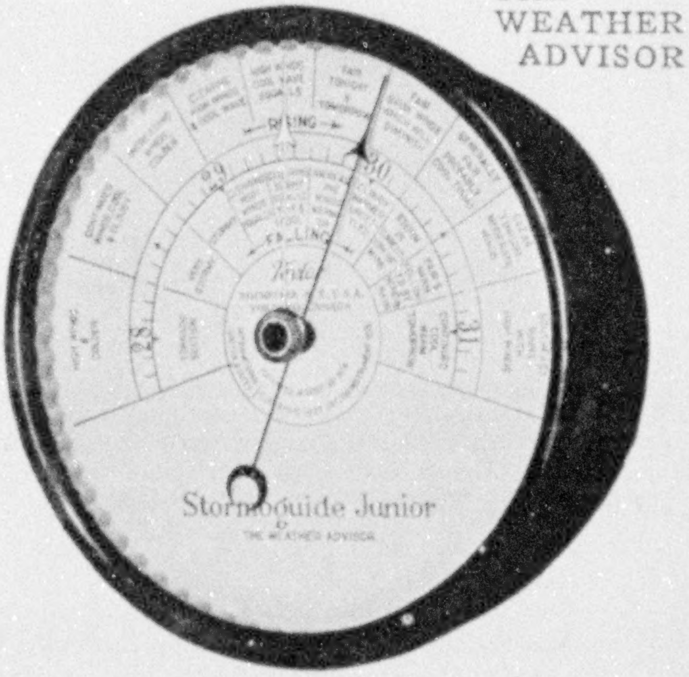

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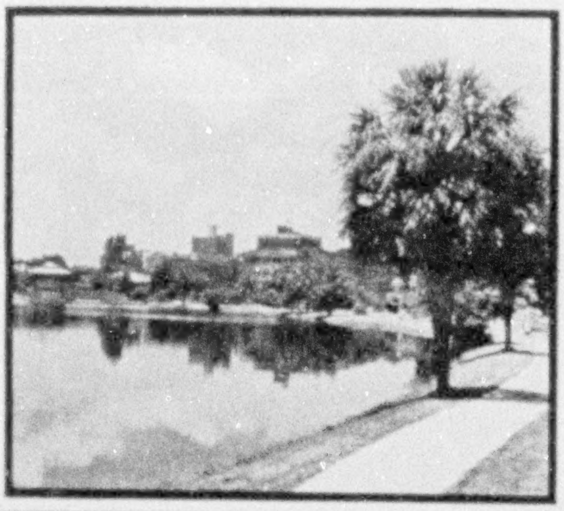

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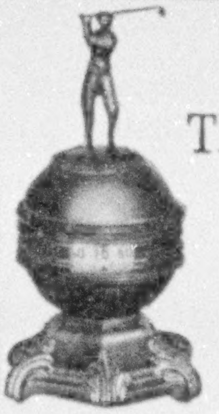

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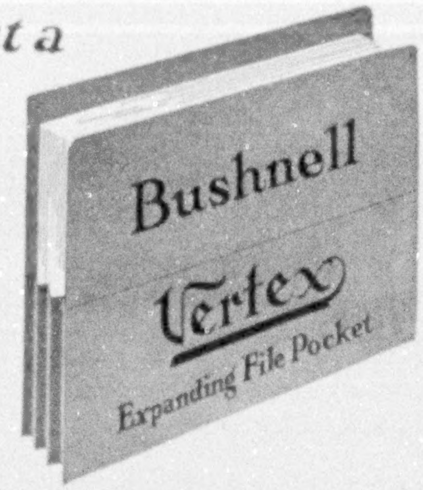

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This reliable Barometer indicates changes in weather 8 to 24 hours in advance. Scientifically constructed, attractive in appearance. Highly polished mahogany case, silvered metal dial, heavy bevel glass front. Size 5½ inches.

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187,776 jars in 1925
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Going even better now

SHAVING CREAM
Ingram's
Shaving Cream

INGRAM'S SHAVING CREAM is such a friend to nearly a million men. It gets you out of a close shave with a whole skin.

No lotions needed . . . INGRAM'S is lather and lotion in one.

For most men, shaving is an ordeal. For many faces . . . it's a raw deal. With INGRAM'S it's ideal.

INGRAM'S SHAVING CREAM cools and soothes the tiny razor scratches you don't see but *do* feel.

Nearly a million men had cool INGRAM shaves in 1926. You, too, deserve cool shaves. So here's our offer:

Write us for your 7 FREE cool shaves. Lather one side of your face with your *usual* shaving preparation; the other side with the *unusual* . . . INGRAM'S. Instantly . . . before the razor touches your skin, you *feel* the difference.

Write us today for your 7 FREE cool shaves. Your skin will thank you.

Or to save yourself time—ask your nearest druggist for 120 of these cool INGRAM shaves.

The jar costs only fifty cents.

Ingram's Shaving Cream

COOLS *and* SOOTHES *as you shave*

Frederick F. Ingram Co.—Est. 1885—241 Tenth St.,
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Real quality coffee ready to serve

THOSE fortunate individuals, accomplished in the art of genteel living . . . who know where to go . . . at what hotels to stop . . . what food to order . . . what persons to meet . . . are the ones most certain to carry with them a supply of G. Washington's Coffee . . . just as they have adopted it as a favorite in their homes.

They enjoy its fine, rich flavor and the certainty of the satisfaction of a cup of real coffee under all conditions.

G. Washington's Coffee is a great improvement in the world's favorite beverage . . . it is "made" by experts, properly percolated, vacuum-dried and sealed while fresh in convenient packages, and comes to you ready to be added to hot or cold water and enjoyed.

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Send for free trial package.

G Washington's INSTANT COFFEE

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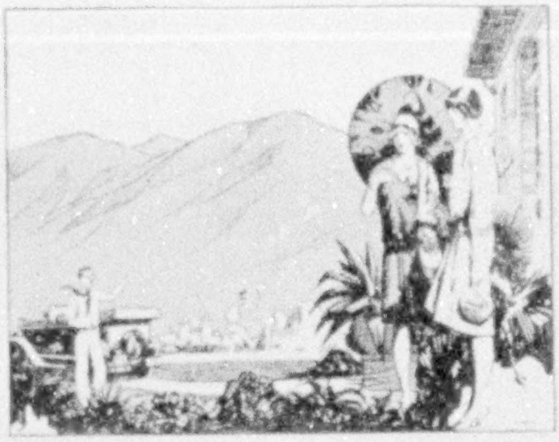
El Paso invites you—



to "winter" in this land of
Better Living

—where fogs, blizzards, storms and floods are almost unknown. Where moderate altitude, constant sunshine, clean, dry air send new health coursing through your veins. Where nature is your friend and ally instead of a perverse enemy!

Come to this metropolitan city of more than 100,000, where you have all the amenities of civilized living (at moderate cost)—where you can enjoy the hospitality of the Old West and customs of the Old South—where you can spend *every* day in this Southwestern out-of-doors of cloudless skies, purple mountains and desert air! Outdoor sports—golf, polo, riding, hunting, tennis, fishing, motoring. Life has endless variety and charm. Old Mexico, of the *vaquero*, the toreador, Castilian aristocrat, is just 6 minutes from downtown El Paso. Enjoy the shops and cafes of Bohemian Juarez—the *clean* border city.

Come *this* winter! See something *new!* Go back refreshed with outdoor living in this miracle climate!

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The coupon will bring it, pronto!

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Please send me your free booklet "El Paso, in the Land of Better Living."

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By CUNARD-ANCHOR LINES new oil burners. Rates include hotels, guides, drives, fees.

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s s "Caledonia," sailing Jan. 16

8th cruise; 19 days Japan-China, option 17 days India; Palestine and Greece; also includes Havana, Panama Canal, Los Angeles, Hilo, Honolulu, Manila, Java, Burma, Ceylon, Egypt, Italy, the Riviera, Havre (Paris), Glasgow. Europe stop-overs.

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s s "Transylvania," sailing Jan. 25

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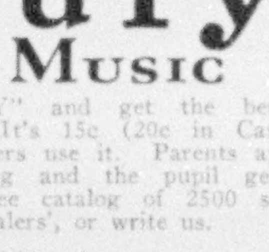

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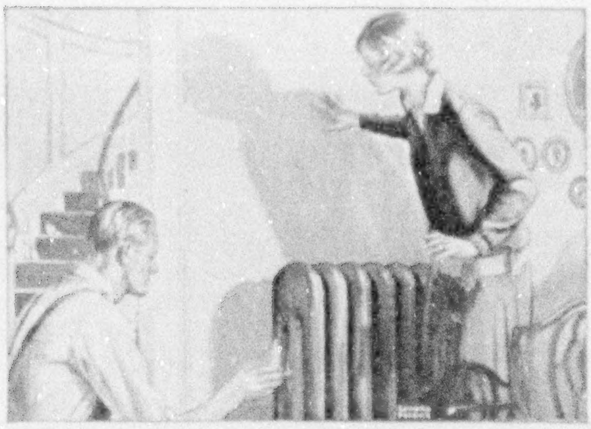


MAKE *One* SIMPLE CHANGE —save 1/3 of your fuel

BEFORE you begin wasting 1 out of every 3 tons of coal (or gallons of oil) *unnecessarily*—have your local heating and plumbing shop replace the air-venting valve on your steam radiators with a Hoffman No. 2 Vacuum Valve.

Then you have hot radiators 3 hours (not 30 minutes) after fires are banked. You get up steam in 15 minutes (not an hour). You bank the fire after dinner and have hot radiators when you go to bed at 11. You have three-quarters of an hour more sleep in the morning—and get up steam by the same hour as before. *You cut your coal or oil bills* 1/3.

By this saving, you earn 50% to 65% on your investment in Hoffman Vacuum Valves *—the first year.* At the end of the second, you get your investment back—plus a profit. Every year, after this, you receive a gift of approximately $5.00 for each radiator in your home.

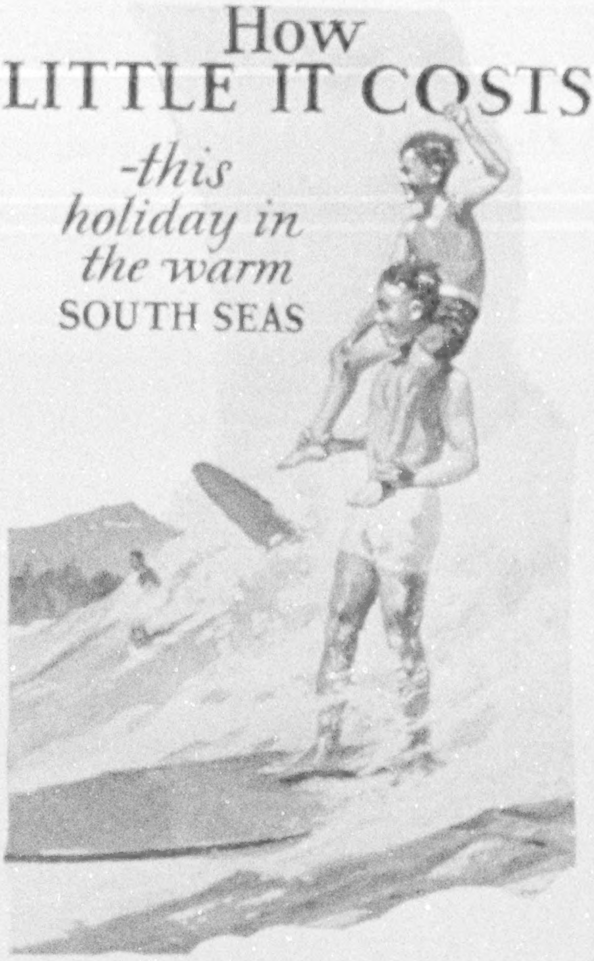
Send for *"How to Lock Out AIR—the heat thief."* It explains the invention that makes this amazing comfort and fuel saving possible. Just print your name and address on edge of this ad and mail to Hoffman Specialty Co., Inc., Dept. BC-1, 25 West 45th Street, New York City.

Hot radiators 3 hours
(not 30 minutes) after banking
15 minutes (not an hour)
–to get up steam
...*for 1/3 less fuel*

HOFFMAN No.2
VACUUM VALVES

How LITTLE IT COSTS

-this holiday in the warm SOUTH SEAS



SEE all that's included—a 2,000-mile voyage from Los Angeles, San Francisco, Seattle or Vancouver out to the mid-Pacific islands of Hawaii. Five to eight days of sailing each way—two weeks at Hawaii's magnificent hotels (one recently completed at a cost of $3,500,000); a two-day boat and motor trip to the awesome brink of Kilauea's smoking crater; inter-island cruising; deep-sea fishing trips; surfboarding and outrigger-canoeing at Waikiki; golf on scenic island courses.

$400 is enough

These four glorious weeks for but little more than most people spend for two—less, perhaps, than you usually set aside for a holiday.

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And send, too, for the two booklets the people of Hawaii have published for you. One is "Tourfax", full of travel information; the other is a 24-page illustrated booklet in colors describing some of the things you'll see—as well as pictures can!

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I enclose 10c. Please send trial tube.

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11-27

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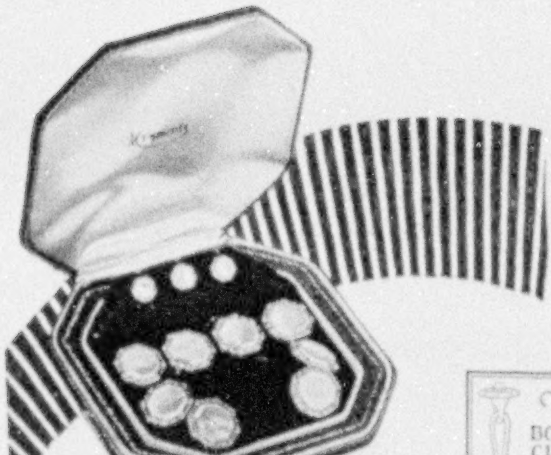

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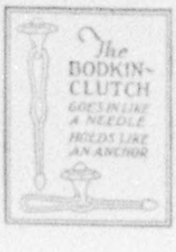

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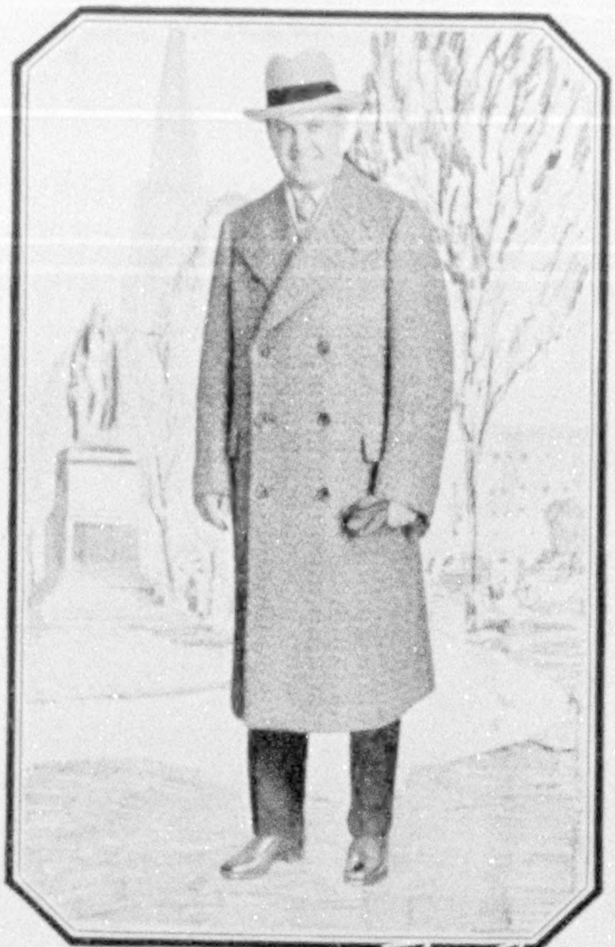

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THAN WEATHER

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Character—and style—are preeminent in Patrick-Duluth overcoats, but of chief importance is the celebrated Patrick-Duluth Cloth—a quality fabric famed for its refined beauty, and its stubborn resistance to Wear and Weather. They have individuality, smart design, deft hand-tailoring and perfect fit. They are more than stylish. Their great warmth makes them "Bigger than Weather."

Handled where good clothes are sold.

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Gentlemen: Please send me your illustrated booklet telling more about these good overcoats, also your complete line of "Bigger than Weather" Virgin Wool Products.

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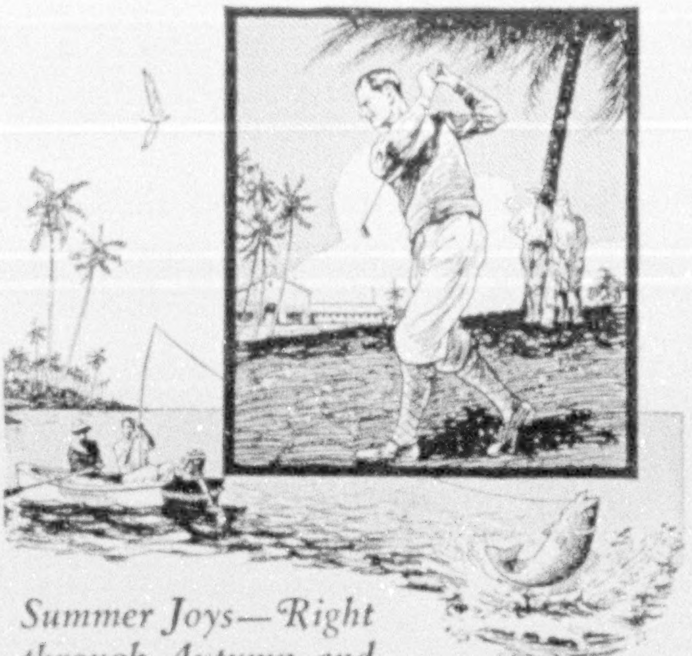

Summer Joys—Right through Autumn and Winter! —in

Hawaii

WHY lay away the cherished golf clubs, or sigh feelingly as dust gathers on the precious fishing equipment? Winter may be coming here, but—

It's spring in Hawaii! Just pack your clubs as baggage ... board a train for Los Angeles ... a luxurious LASSCO liner direct from there to Honolulu ... and you can go right on playing golf for days and weeks and months!

You can swim, hike, play tennis, paddle a canoe or ride a surf board and laugh at the calendar. Or you can dream away hours in perfect relaxation under the kindliest skies in the world!

Sail direct from Los Angeles to Honolulu over the Popular Southern Route

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ALL-INCLUSIVE TOURS—$278.50 and up—covering every necessary ship and shore expense depending on steamship and hotel accommodations selected. Three weeks time Los Angeles to Hawaii and return, including the 3-day wonder trip from Honolulu to Hilo and Kilauea volcano.

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1-11

Spotless!

How very disagreeable to scrub, scour and dip water to keep the toilet bowl clean! Use Sani-Flush. See every mark, stain and incrustation vanish!

It's a labor-saver. Simply sprinkle Sani-Flush into the bowl, follow directions on the can, then flush. The whole toilet is really clean, for Sani-Flush gets into the hidden, unhealthful trap and cleans that too. Harmless to plumbing connections. To keep a spotless toilet bowl, keep Sani-Flush in the bathroom always.

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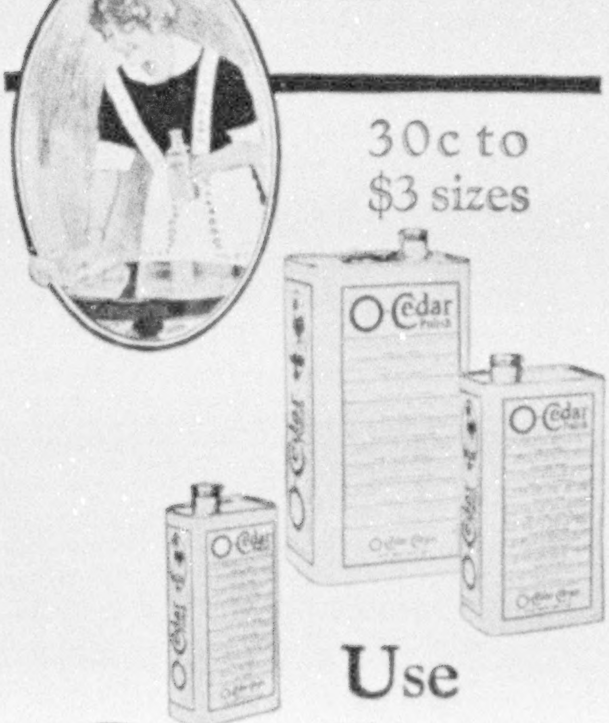

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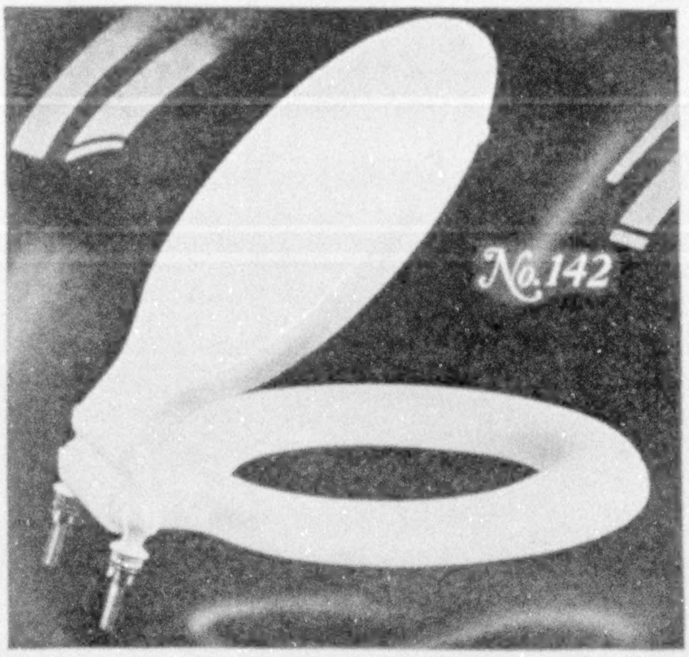

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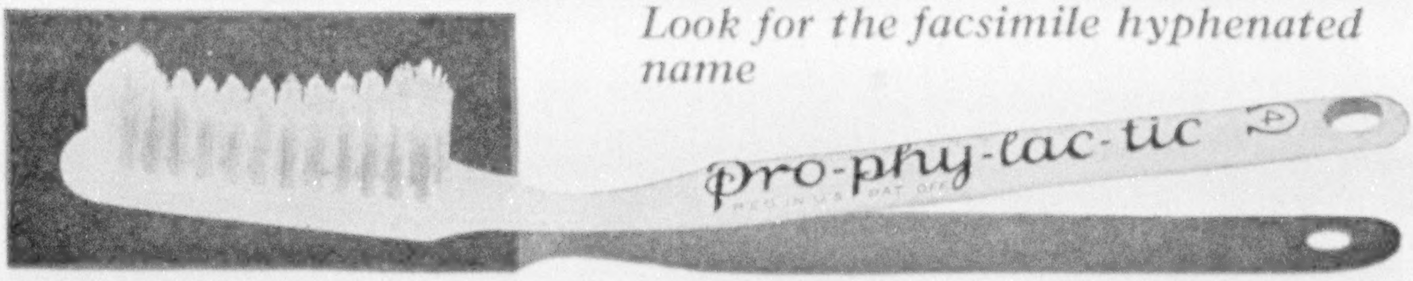

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QUALITY in the piano action means quality in the piano. For the piano action is the very heart of the instrument! Manufacturers who build worthy pianos are fully aware of the importance of using a fine piano action to match the quality of their instruments. For this reason, leading American makers have used the Wessell, Nickel & Gross piano action for upward of half a century.

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50 Giant Darwin Tulip Bulbs, Finest Mixed, for $2.00
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Few spring flowering plants rival the Darwin Tulip for brilliance of bloom. Borne on strong stems often exceeding three feet. They are a wonderful addition to the flower garden.

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Then there are tennis, swimming, surf-bathing, riding, motorboating, hunting, fishing, trap-shooting, motor-racing on the great beach where Segrave broke the world's record at the rate of 203 miles per hour. Palatial yachts ride at anchor in the peaceful, quiet waters of the Halifax River.

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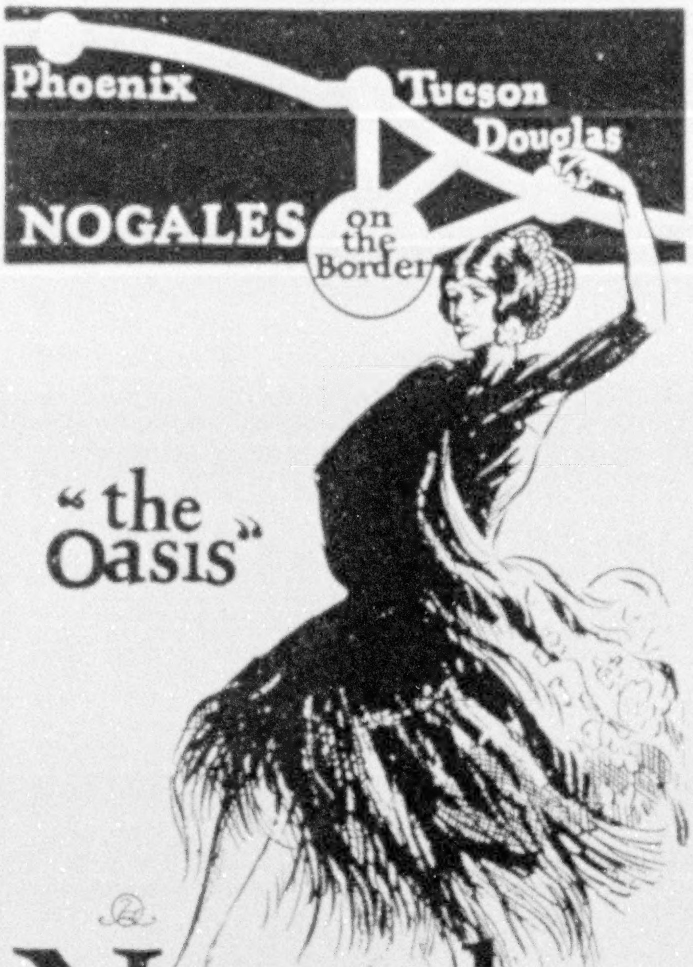

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This is Arizona's real "oasis". Lots of clean sport and entertainment here! Hotels . . cafes . . hunting and fishing in Scenic Sonora, Mexico. No red tape—Border never closed.

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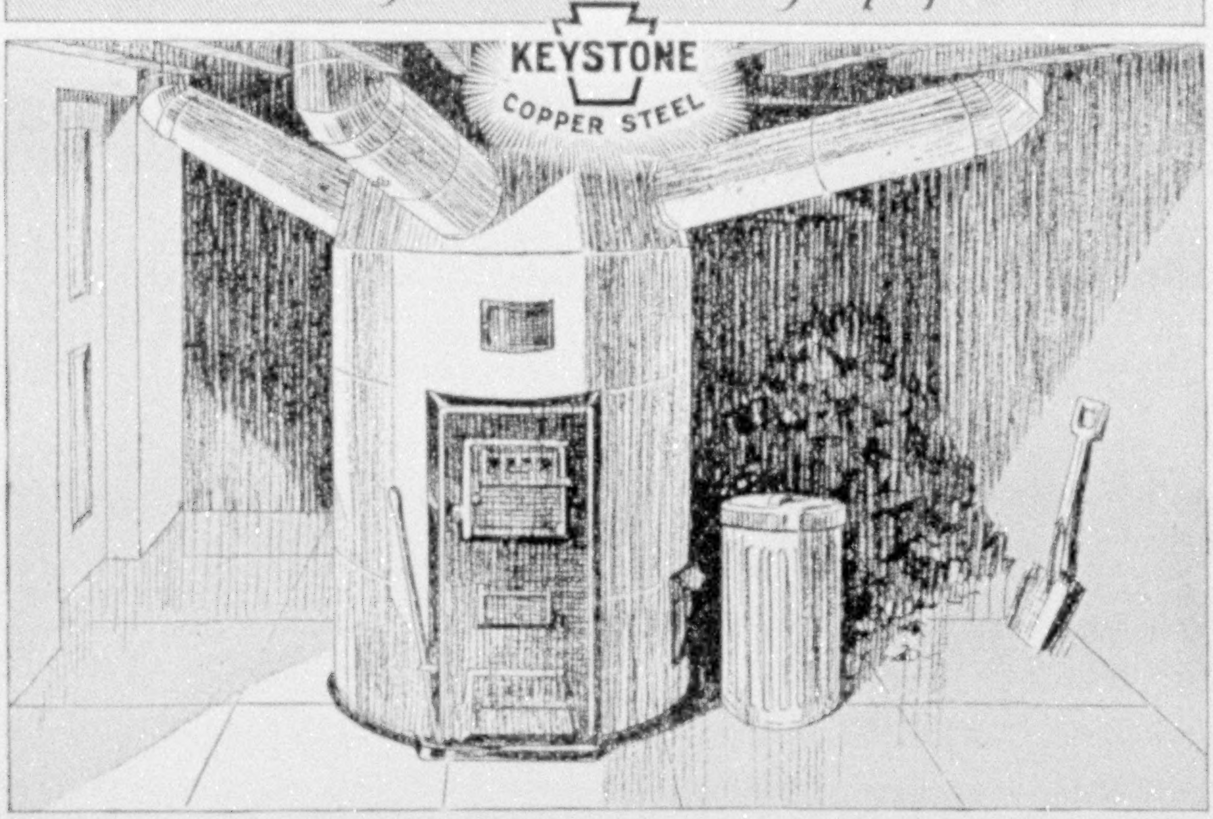

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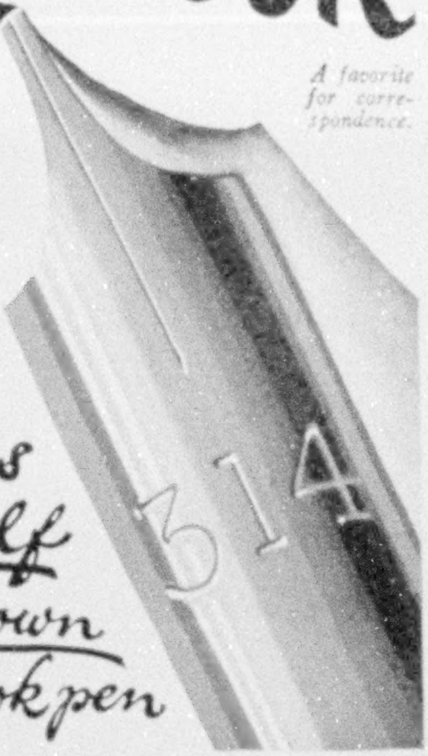

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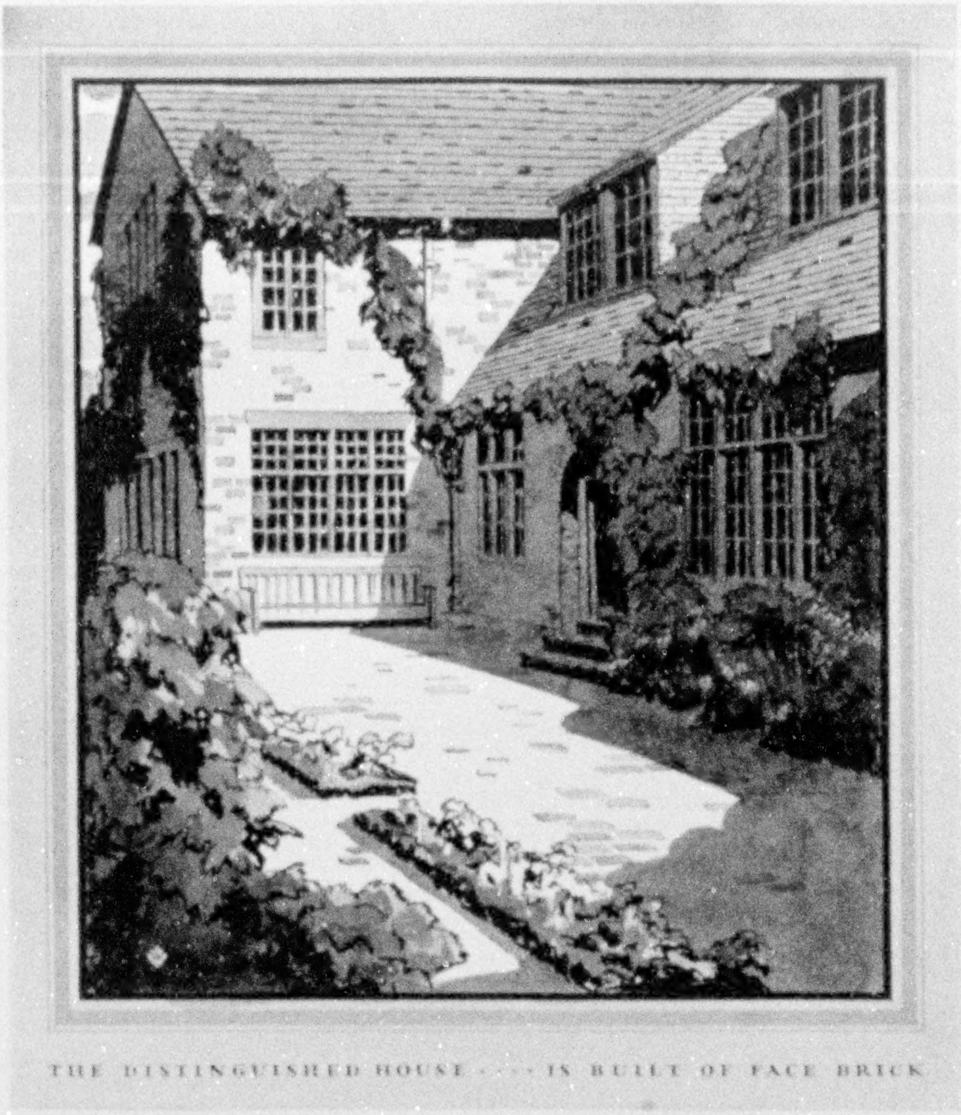

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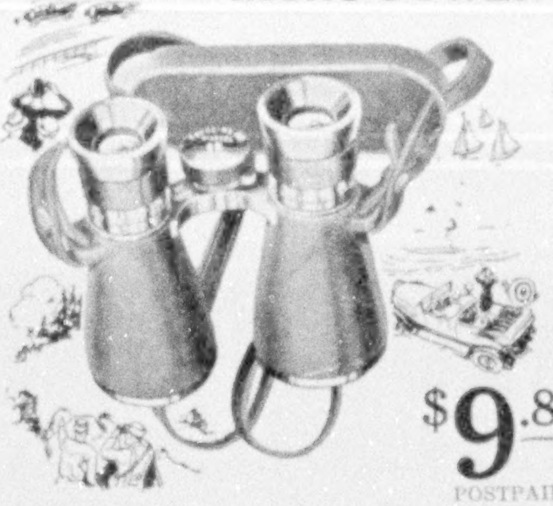

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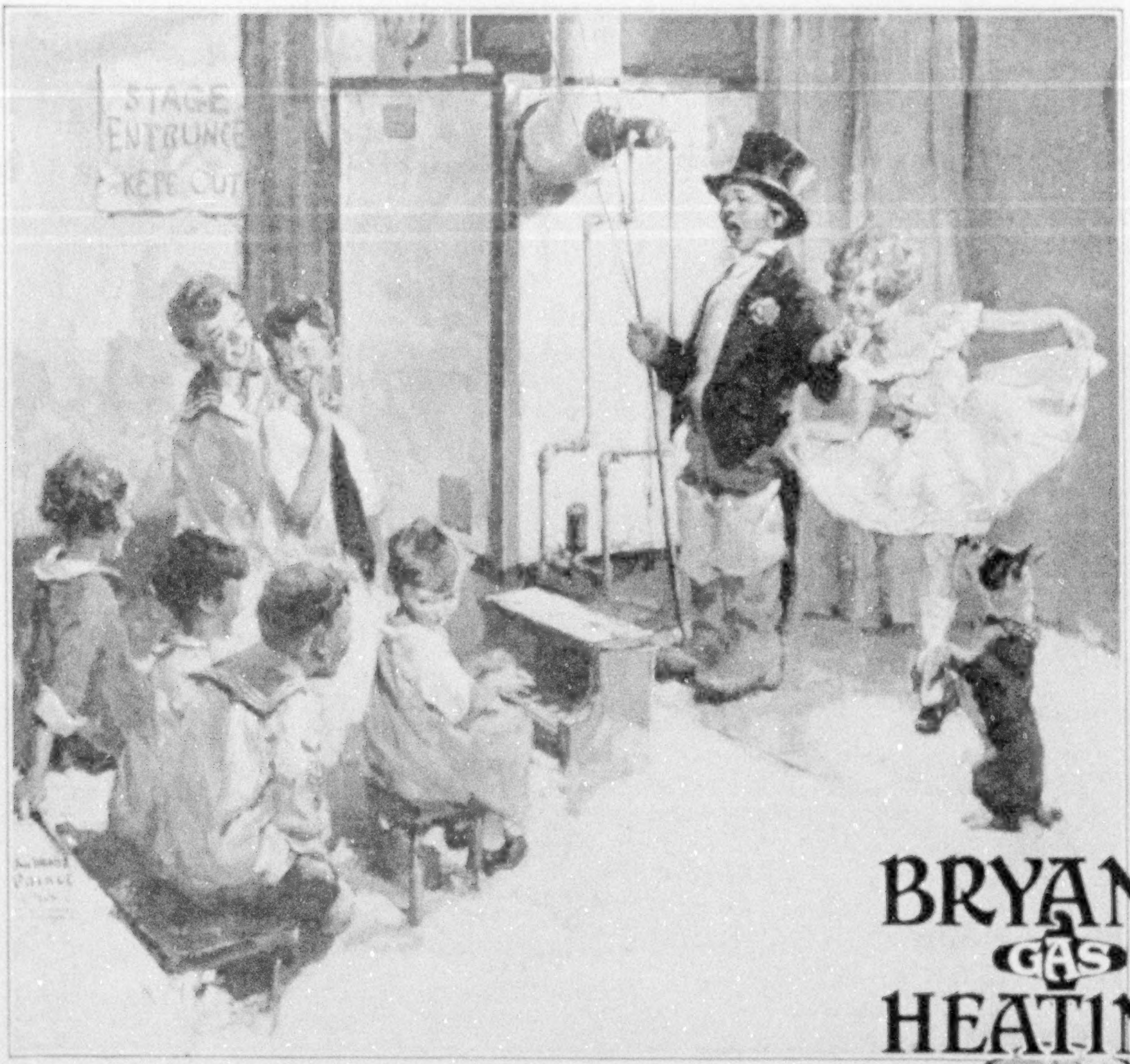

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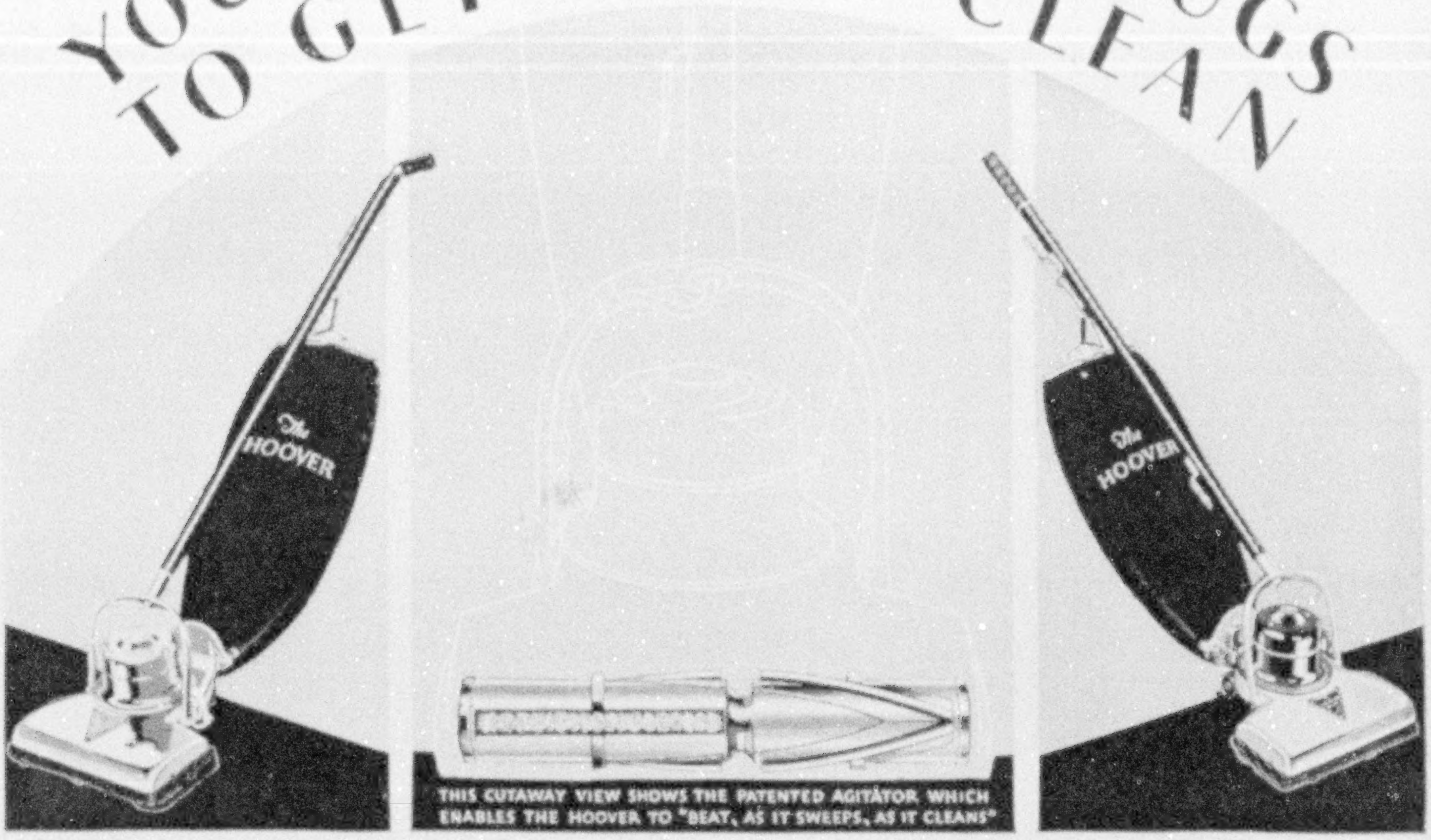

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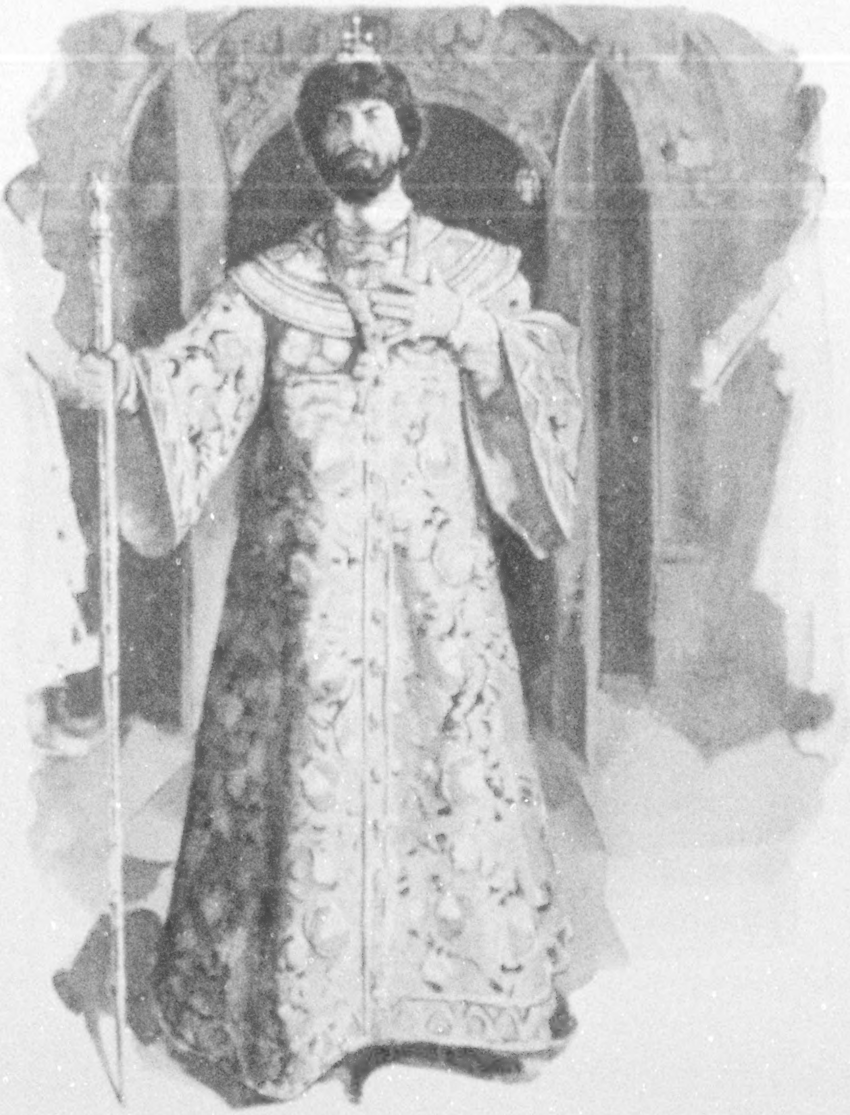

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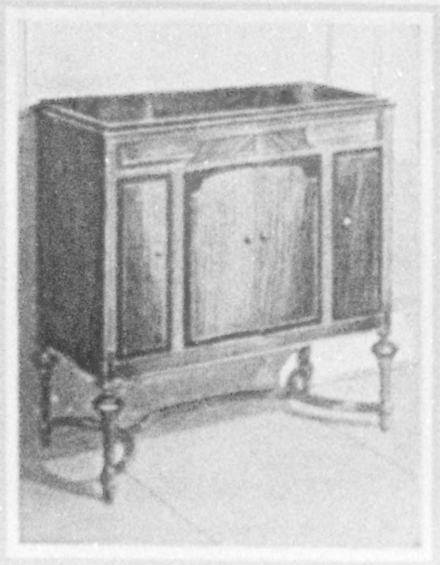

The Orthophonic Victrola furnishes the finest music for the home. It never disappoints. Model Four-forty is illustrated above.

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